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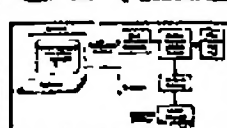


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Evolving a Pro-active Higher Education System in the 21st Century : Some Thoughts

S. Shajahan*

Introduction

The forces of globalisation, deregulation, open competition, privatisation and technological changes are impinging on society. These forces that have an impact on society and business will be increasingly affecting the context in which education occurs and institutionalises the system and a pattern of education and training is essential which manifests a paradigm shift obviously thus leads to overall personality development of trainees and professionals to enable them to handle these challenges well.

Present Status

Global higher education has undergone a paradigm shift. The cloistral pursuit of knowledge for its own sake, initiated by the renaissance, prevailed in the academic campuses for many centuries. It ushered in "Liberal Education", which emphasised an unmixed philosophic enquiry into truth and rejected the pursuit of knowledge for utility. Thus study for work, skill acquisition and other interests had no place in the ivory tower!

Professional education in India has expanded very rapidly in the last four decades. However, the major issues which we are confronted today are the quality and relevance of education, in context of changing socio-economic milieu. Unfortunately, our traditional educational system tests the ignorance rather than the knowledge and competence possessed by the candidate. It fails to tap and channelise the energies of the students for holistic development and optimum utilisation of their potential to achieve large societal objectives. The system leads to lopsided development of personalities, without any humane favour, which fail miserably in managing men and resources. Such personalities fail to answer two critical queries: (i) What do I expect from society in the light of my potentialities and (ii) What do I owe to society in the light of privileges I enjoy as a member of society? Consequently, their learning suffers, motivation deteriorates and perception becomes sick.

Academic institutions cannot avoid the reversal of their goals and the processes to achieve them. This reversal is substantial and it is not an exaggeration to describe it as a paradigm shift, from elitist esotericism to the common man's right to knowledge, from an inverted inquiry into the mind, to an exploration of its environment, be it economic, political, scientific or technological; and from being culture specific to becoming universal and global. This paradigm shift is unique in the history of global higher education.

The Socio-political scenario prevalent in our country clearly reflects that our educational service is suffering from a number of deficiencies. The increasing rate of crime, corruption, injustice, agitations, unem-

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ployment and general social unrest vividly mirror the weaknesses of our educational system. The pseudo educated elite portray indecisiveness and lack of determination and are general society at large. Thus, in absence of a system that believes and works towards better understanding of needs, aspirations and potentialities of students, the objective of producing mature, balanced and developed personalities seems unachievable.

At the turn of the century, we have thus inherited a system of higher education which is rigorously intellectual, widely diversified and helpfully social and utilitarian. Nevertheless, it is geared to achieve material wealth rather than build human resources. The youth of today are challenged to cope with the competitive marketing of their potential for money and cyber comfort. They are not challenged to contribute to the quality of life on this planet. Ethical considerations, cultural affinities and involvement in national life stand low among their priorities. Educators are challenged to respond to such a system in order to make it viable in the 21st century.

Management Education

India does not enjoy a fairly old history in terms of systematic management education. India's first management school, "Indian Institute of Social and Business Management" was established only in 1954. It was followed by Indian Institute of Management at Calcutta (1961) and Ahmedabad (1962), established in collaboration with Sloan School of Management and Harvard Business School, respectively. The year 1970 witnessed the development of IIM Bangalore, IRMA and the entry of a host of private funded business schools.

(i) Research & Development

- * Market Research and its relevance to the industry
- * Executive development programmes
- * In house development of Managers in the companies
- * Consultancy to industry.

(ii) Ethics and Excellence

- * Ethics in dealing with faculty, students, staff, community, industry and accreditation
- * Recognition of excellence.

(iii) Role of professional bodies like All India Management Association, Association of Indian Management Schools, Confederation of Indian Industry, Assocham, etc.

The Corporate world is heading for a rapid transformation to face the challenge of the future. The state-of-the-art technology requires ultra modern managers and executives. They are expected to be efficient, competitive, speedy and above all result oriented under all circumstances.

The economic liberalisation made many Multi National Companies (MNCs) entering with a bag questioning the survival of the small and medium sized organisations. They are finding it difficult to face the tough competition thrown on them. This results in these companies searching for highly talented and result oriented personnel in the form of MBAs but at an affordable cost to take over the complete responsibility of facing the competition.

With all this a random sampling of the MBAs of Chennai colleges revealed a stunning surprise. Out of the 365 MBAs surveyed, 293 were jobless of which 171 had completed MBA two years ago. Of the 7 employed only 15 were in executive position and others merely sticking on to their job mostly doing Sales representative job after completing MBA with Finance specialisation.

Where and What are they lagging? The answer is simple. They are unable to sell themselves to the employer or they are unable to perform what is called for. "THE SPEED AND THE EFFICIENCY". The reasons were analysed as follows :

1. Poor knowledge and focus on the subject (32%)
2. Lack of communication (29%);
3. Failure to make impression at the first sight (19%);
4. Lack of practical knowledge and exposure (14%) and
5. The price they claim by way of salary (6%).

Recommendations to improve the Existing Curriculum

- * More stress should be given to case studies which are related to Indian market conditions and scenario and MBA programmes should not be treated like other college programmes.
- * More interaction with industry people with the programme being made intensive with a thrust on practical training rather than on theoretical parts.
- * More focus on industrial visits and problem solving skills through stimulated management games.

- * Direct selling experience should be included.
- * More stress should be given on Information Technology.
- * More interaction with corporate world so that the current curriculum can be upgraded/modified depending upon industry and corporate requirements.

Empirical Study

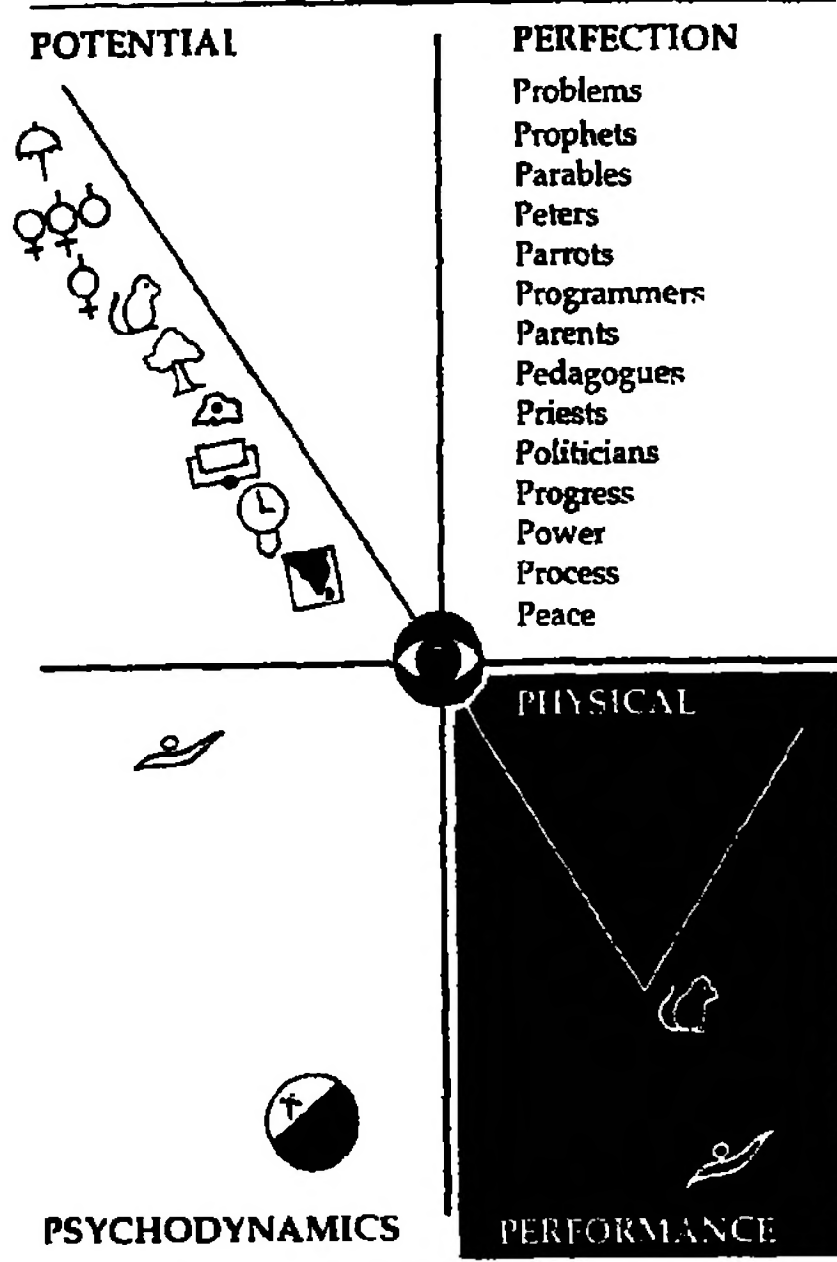
The goals and objectives of higher education have been seriously questioned in the present systems. The students' goal is to get a degree (without study) and a job (without difficulty), the teachers wish to teach less and give more marks... Vacant posts and unemployment co-exist indicating the mismatch between university products and country's needs. The present science, technology and management education has produced neither the right type of manpower nor the local problem-solving capabilities. Our educational institutions recruit teachers by advertisement and launch them straightaway on the teaching career to face large classes. Rarely the Selection Board would concern itself whether the candidate has a *calling for the vocation*. When that happens, the classroom environment will be transformed. The young recruit learns by trial and error, by which the performance in the classroom becomes staler and staler, with each passing year. Gradually it ends in apathy towards the profession, which is sufficient to kill the excitement on entering a lecture hall. The teacher has to keep before him his role as a dynamic information-processing model which demands his own assessment of facts and figures that he uses during his lecture.

The Approach

In this Context the model 'Potential Performance Programming' (Exhibit-I, see at page 5) devised by the author, when tested in the class room environment of SRM Engineering College, Chennai has given some encouraging results. This model enables the teacher to identify the major bottlenecks of each and every individual from performing their level best. Hence the potential performance programming enables an individual to explore his strength; eliminates problem and ensures peace of mind. The model has conceived 'Nature' as a source of inspirations and activities. Innovation/Creation/Creativity are viewed as a synergy of past, present and future on a 'Time' scale with positive and negative frame in the conceptual world of business. Focus on the individual is given through 'vision' created through symbols and tree of life in all dimensions. The concept of nor-

malty/limits is explained through the 'Struggle' associated with each and every activity of the individual including the process of giving birth and death. The internationalisation of business is explained with the help of price/production waves, global networks and market forces. The cyclical nature of waves flow, is well explained to the future technocrats. However the emphasis is given more on tuning the mind of every individual into 'HAPPINESS'. The duality/illusions of life is explained with the help of common observations from everyone's daily life. The ways and means of achieving self realisation is purely exposed to the individuals through 'TRINITY' concept. The perfect co-ordination of 'mind', 'body' and 'spirit' is the real objective of this exercise. The proposed model helps the students to priorities their needs in harmony with institution/parent's objectives. This also provides ways and means to tackle frustrations in the study environment.

Potential/Performance Programming (PPP)*



The model was put to test among 200 students of III year BE Computer Science and Electronics and Communication Engineering between December

1998 and July 1999. A well structured 'Rigidity Scale' designed by Dr. N.K. Chadha (1986) was used for collecting data regarding various dimensions of intellectual emotional, dispositional, social, behavioural perceptual and creative rigidity. The subject chosen for the study was Engineering Economics and Management innovative lectures, group discussion and noval pedagogues adopted by the author ensured the maximum participation of the students during lecturing. The output was measured in terms of their performance in the university examination and interest created in their respective areas of engineering.

Major Findings and Interpretation

Rigidity is a tendency to preserve and resist conceptual change, to resist the acquisition of new patterns of behaviour and to refuse to relinquish old and established patterns (Schaie, 1955). Accordingly, higher the score, higher the rigidity along that dimension. For the purpose of analysis Mean Scores, Standard Deviation and Coefficient of Variation have been calculated. Table 1 (see at page 5) depicts the position of various personality dimensions on Rigidity Scale.

Out of seven dimensions that have been studied, in as many as five dimensions students have shown consistency in their rigidity, except that of emotional and creative rigidities during Pre-Training session. This shows that overall engineering personality is rigid before attending the programme. However, after attending the training, they have scored minimum coefficient of variation for emotional rigidity and creative rigidity. This shows, that they are associated as business professional and have a flair for creativity.

It was established fact that students were actively interested in taking-up academic and non-academic assignments during the session and also ensured a very high percentage in the University Examination. The over all pass percentage for the batch was 96%. Again, the post-lecture analysis showed that the model has enhanced the creativity of the student and helped to stabilise their emotional rigidity pattern. At present, the model is about to test for its ability to enhance teaching effectiveness of young faculties through ISTE Chapter of the college. In short modern innovative training programmes, based on Indian culture, philosophy and tradition, ensures a better output on the teaching-learning process.

Food for Thought

The major issues that are coming to limelight and call for more concentrated efforts are :

- How the integration of Management and Technology can take place?
- To what extent industry can participate in imparting management development training?
- Is there a necessity for area specific Technical/Management courses or general courses like Information Technology Management, Infrastructure Management, Value Chain Management?
- What should be the role of Technical Education in post-Y2K situation?
- To what extent autonomy can be offered to Technical Institutes to develop their own curriculum?
- With the limited infrastructure facilities, how a budding Technocrat/Manager can equip himself for future.
- How to internationalise the Indian Higher Education?
- Role of Government and controlling authorities.

Conclusion

In the light of the above, higher education and professional education services in the 21st century will be to develop and concretise in learners:

1. The potential to think critically to synthesise and generalise;
2. The feelings and attitudes that will make it possible for the learner to think and act appropriately;
3. The desire for need for change and discover appropriate alternatives;
4. The capacity to establish and sustain purposeful working relationship;
5. A sound philosophy of life to rebuild the personality expressed through the professional self.

Meeting uncertainty by emphasising a set of new basics world class quality and service, enhanced responsiveness and continuous short cycle innovation and improvement aimed at creating global market for both new and apparently mature educational courses/programmes will be tune of the game in the next millennium. The educational system which fails to overcome these challenges would succumb to the severity of global competitive pressure. However, our programmes and courses should meet the criteria of innovation, novelty, relevance and acceptance by students. Potential Performance Programming (PPP) model once inducted in the on-going learning-teaching learning process in our educational system, will hope to meet these challenges effectively.

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3. Fagg, Kevin and Ramn, Kathy, 1997, *Management Education in the Coming Indian Management*, March, 36 (3).
4. Prahallada, N.N. 1995, Contemporary Significance of Value Education, in Uberoi, N.K., (ed), *Professional Competency in Higher Education*, Delhi; Centre for Professional Development in Higher Education.
5. Statys Ranjan Acharya. 1995, Changing face of Management Education - A Survey, *JIMS 8-M-Vol-4*, No. 2, April-June.
6. Neelu Rohmetra, 1999, Personality Development - The Contribution of Professional Education - *Paradigm* Vol. 2, No. 2, Jan. □

Exhibit - I

Fleeting Present		Emerging Future
1. Take what you can get	~	Courses on demand
2. Academic Calendar	~	Year-round operations
3. University as a city	~	University as an idea
4. Terminal degree	~	Lifelong learning
5. University as an ivory tower	~	University as a partner in society
6. Student = 18 to 25 years	~	Cradle to grave
7. Books are primary medium	~	Information on demand
8. Tenure	~	Market value
9. Single product	~	Information re-use/info-exhaust
10. Student = 4 year revenue source	~	Lifelong revenue source
11. Competition in other Universities	~	Competition is Everyone
12. Student as a Pain	~	Student as a Customer
13. Delivery in a classroom	~	Delivery anywhere
14. Multi-cultural	~	Global
15. Bricks & Mortar	~	Bits & Bytes
16. Single discipline	~	Multi-discipline
17. Institution centric	~	Market centric
18. Government funded	~	Market funded
19. Technology as an expense	~	Technology as a differentiator

Table 1 - Position of Responses

Rigidity Scale Dimension	Pre-Training Responses			Post-Training Responses		
	Mean	S.D.	C.V.	Mean	S.D.	C.V.
Intellectual Rigidity (A)	7.000	1.291	18.44	7.000	1.291	18.44
Emotional Rigidity (B)	7.000	2.517	35.95	5.286	1.380	26.10
Dispositional Rigidity (C)	8.286	2.215	26.73	8.286	2.215	26.73
Social Rigidity (D)	7.143	1.345	18.83	7.143	1.345	18.83
Behavioural Rigidity (E)	4.571	1.718	37.58	4.571	1.718	37.58
Perceptual Rigidity (F)	5.429	2.225	40.98	5.429	2.225	40.98
Creative Rigidity (G)	4.857	1.864	38.37	5.143	1.069	20.78
Overall personality rigidity score	6.326			6.123		

INDIA-LIS : A New E-Mail Forum for Indian Infocrats

V.K.J. Jeevan*

A mailing list or listserver (named after the software used to run the electronic mailing and discussion lists) on the Internet permits people to discuss different issues concerning a topic. The modus-operandi of such a system works like this. A listserver has two e-mail addresses, viz. the listserv address and the list address. The former one generally accepts commands for joining/existing a list, to receive acknowledgements etc whereas the latter one accepts messages of actual discussion which will be scanned by a list moderator (optional) and distributed to all members of the list. Any message sent to the email list address will be distributed to every member of that list, and hence one should be cautious on not sending commands meant for the server to the list address. The members depending on their interest can reply or comment on these messages; they don't have to actively participate by sending messages all the time; or they can just "listen/lurk" to the discussion and stay as a silent spectator to the activity; they are also free to leave the list at their choice. A common new user mistake is to send subscription requests to the regular list address, that can annoy other list members by adding unnecessary junk mail to their already burgeoning mail boxes. The user doesn't have to learn the software and hardware details to join a forum. A person conversant with the basics of how to send and receive e-mail messages can successfully join and interact with a list forum of his/her interest. Due to the swiftness by which an electronic mail is delivered, electronic mailing lists can do a lot more than the traditional paper distribution lists. In some cases, an electronic mailing list can even replace/augment a conference call.

Care should be made to observe the basic etiquettes regarded as NETIQUETTE while dealing with listservers, like don't spam or send an advertisement or other unsolicited material to large numbers of mailing lists without any consideration of the relevance of the material; commands are sent to the LISTSERV and not to the list; access to a mailing list is a privilege and not a right; use language with care;

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be cautious when communicating to list servers or newsgroups; be able to support what you speak etc.

The Internet hosts different mailing lists^{1,2} on subjects ranging from astronomy to zoology and from music to geneology. The "Catalist" service maintained by LISTSERV lists all public lists running on LISTSERV servers worldwide (<http://www.1soft.com/lists/listref.html>). If you don't have a web browser, send the command LIST GLOBAL search string in the body of mail to LISTSERV@LISTSERV.NET (or to LISTSERV at any host site), will fetch a mail message in return containing a list of all lists known to LISTSERV. The NEW-LIST project at North Dakota State University stored list announcements back to 1989 as an archive on LISTSERV.NODAK.EDU, which can be accessed either via LISTSERV database searches or on the web at <http://listserv.nodak.edu/archives/new-list/>. Another archive is maintained by SRI on its server at sri.com, and can be accessed by ftp ([ftp sri.com](ftp://sri.com), user: anonymous, password: your user-id, cd netinfo, get interest-groups). The lists could also be located by any of the World Wide Web search engines such as Alta Vista, Yahoo! or infoseek. The NEW-LIST list (NEW-LIST@NDSUVM1.BITNET) is the primary location for announcements of new mailing lists. A list of mailing lists available primarily through the Internet and the UUCP network, indexed by name and subject attributed to Stephanie da Silva is available at <http://www.neosoft.com/internet/paml/index.html> or <http://www.cis.ohio-state.edu/hypertext/faq/usenet/mail/mailling-lists/top.html>. Other information on list of lists are given below under the heading 'List of Lists'.

List of Lists

Kovacs, Diane K. : Directory of Scholarly Electronic Conferences. FTP archive of various academic lists, newsgroups and others, <http://n2h2.com/KOVACS/>

Neou, Vivian. Search The List of Lists (<http://catalog.com/vivian/interest-group-search.html>)

NetSpace.Mailing List WWW Gateway (LWGate) (<http://www.netspace.org/cgi-bin/lwgate>)

Liszt : A directory of over 70,000 listserv, listproc,

majordomo and independently managed mailing lists (<http://www.liszt.com/>)

TILE.NET/LISTSERV : A reference to Internet discussion groups indexed) alphabetically by description, name, host country, sponsoring organization, subject etc. (<http://www.tile.net/tile/listserv/index.html>)

Interlinks. E-Mail Discussion Groups : Searchable database of more than 5900 lists. (<http://alabanza.com/kabacoff/Inter-Links/listserv.html>)

Neosoft. Publicly Accessible Mailing Lists (<http://www.NeoSoft.com/internet/paml/>)

EDWEB. K-12 : E-Mail Discussion Lists and Electronic Journals (<http://edweb.gsn.org/>)

SURFNET. Global List of LISTSERV Lists. (<gopher://ftp.nic.surfnet.nl:71/00/surfnet/net-management/earn/services/listserv.lists>)

Mailing Lists Available in Usenet. (<http://www.cis.ohio-state.edu/hypertext/faq/usenet/mail/news-gateways/part1/faq.html>)

Like other professional fields, Library & Information Science also holds a host of listservers and few of them are listed at page 9.

Hard/Software

Operating an Internet email system requires a fairly substantial commitment of resources, like a stable and reliable Internet connection of reasonable bandwidth (probably a minimum of 56 Kbps) to take care of the huge traffic expected from a mail server, one or two manpower at all times to virtually tackle the problems like a hobby. Reliability is also very important for mail services, even if one is required to have a slower connection. In terms of hardware, one can run many types of mailing list software on many different types of machines. But it will be safer to work with the commonly accessible hardware platforms and the most common software. It also provides access to a large community of users who work with these hardware and software systems. A good mail server would be a dedicated Pentium of not less than 166 Mhz, with at least 2-4 GB of disk space for storing of messages. As the machine will have to initiate many simultaneous mail processes, it should have as much RAM as possible. For example the National Library of Canada has a machine running with 256 Mb of RAM.³ The software is responsible for the management and distribution of these mailing lists to multiple subscribers. Many popular mailing list software choices^{4, 5} like, MAJORDOMO a freeware system and LISTPROC owned and developed by

BITNET on platforms UNIX or LINUX are available. L-Soft LISTSERV software is one of the popularly used and well supported commercial product. LISTSERV is the software being operated by the National Library of Canada and the International Federation of Library Associations, to operate its lists like LIBJOBS, IFLA-L and DIGLIB.

LISTSERV by Eric Thomas's L-Soft international, Inc. (<http://www.lsoft.com/manuals/index.html>), permits to create, manage and control "electronic mailing lists" on a corporate network or on the Internet, is now a commercial product sold by the Listserv Lists. The software was originally designed to operate on USENET Newsgroups IBM's VM operating system and is now being made available on other common operating systems. Since its inception in 1986 for IBM mainframes on the BITNET academic network, LISTSERV has been continually improved and expanded to become the predominant system in use today. LISTSERV is now available for VM, VMS (TM), unix(R), Windows NT(TM), and Windows 95(TM). LISTSERV itself is designed to operate in an identical manner no matter which operating system it is running under. A LISTSERV accepts commands requesting different actions, such as subscribing to a list or listing members of a group. BITNET has facility to process these commands to the LISTSERV using an interactive message facility. But when working on Internet, one has to send commands within an email message to the LISTSERV address, the status of the operation which it acknowledges by another e-mail. More information on LISTSERV commands can be found in the LISTSERV reference card, which you can retrieve by sending an "INFO REFCARD" command to LISTSERV@INFOSERV.NLC-BNC.CA.

INDIA-LIS

We have seen few of the listservers discussing hot topics relevant to library profession. Any scanning of Internet search engines and the websites will reveal the mass of such forums on the internet, dealing with general as well as specialised aspects of library discipline, education and profession. The pioneering effort to set up a listforum⁶, LIS-FORUM for Indian library professionals was made by the National Centre for Science Information, an autonomous Inter University Information Centre of the UGC located in the Indian Institute of Science, Bangalore, with the support of NISSAT, DSIR, New Delhi. But the moderator of the forum Dr. T.B. Rajashekar admitted in the SIS-98 conference held in the Central University of Hyderabad last year the intricacies of running the forum, and the mail hopping and bounc-

ing that used to take place in between Indian e-mail networks like ERNET, NICNET, VSNL NET etc. Even this author is a member of the forum and mails from the forum has come only for the first few days of subscription. Another attempt is the recent venture IASLIC-LIST⁷ launched by IASLIC. The details about subscribing to Indian e-mail lists on Library & Information Science is shown below under head "How to Join Indian-LIS listservs". Due to one or more reasons, the fact is that the Indian Library & Information Professionals have not yet fully exploited the utility of the listservers by involving into healthy discussion on improving the organisational, training, operational and professional attributes concerning the field.

How to Join Indian Library & Information Science Listservs

1) INDIA-LIS

List address: INDIA-LIS@INFOSERV.NLC-BNC.CA

Listserver address:
LISTSERV@INFOSERV.NLC-BNC.CA

To join, send an e-mail to listserv@infoserv.nlc-bnc.ca with the command subscribe INDIA-LIS your name (e.g. subscribe INDIA-LIS Ajay Kumar Singh).

To send messages relevant to discussion in the forum send the mail to INDIA-LIS@infoserv.nlc-bnc.ca

Websites: <http://www.iitkgp.ernet.in>

<http://www.nlc-bnc.ca/ifla/>

2) LIS-FORUM

List address: lis-forum@ncsi.iisc.ernet.in

List server address: listserv@ncsi.iisc.ernet.in

To join, send an e-mail message to listserv@ncsi.iisc.ernet.in with the command subscribe lis-forum your name (e.g.: subscribe lis-forum Ajay Kumar Singh)

Website: <http://144.16.72.150/ncsi/services/>

3) IASLIC-LIST

To join, send an e-mail to server@listserv.indiax.com with the command JOIN IASLIC-LIST

Website: <http://www.indiax.com/cal/iaslic>

How it Started?

IFLANET was willing to sponsor an LIS-INDIA

list on their machine in Ottawa, and the Central Library of Indian Institute of Technology, Kharagpur approached them with a similar query few months back and then the collaboration came along which culminated in the hosting of INDIA-LIS. The content of the discussions on the list together with the administrative aspects like granting/cancellation of membership will be the responsibility of the Indian side whereas the system related responsibilities will be honoured presently by IFLA.

Since this is the first attempt to work with a listserver at such a distance, and we were worried about the affects of distance on potential subscribers — timeout errors or too many hops — we have tested trial messages in the last six months. The e-mail addresses for the trial run was collected from our sources and by sending a 'recipients lis-forum' request to listserv@ncsi.iisc.ernet.in to get the complete list of e-mail addresses of that list forum. The Central Library has also made arrangements with the Computer & Informatics Centre of the IIT, Kharagpur to transfer the operation to one of its servers, in case of any impending operational difficulties.

Working with INDIA-LIS

The hardware installations are located presently in the sophisticated servers of IFLA at the National Library of Canada, and the software used is Listserv. Any topic pertaining to Library & Information Science in India form the potential content of the forum. Any person concerned with these topics on any part of the globe can join it. All commands are sent to the listserv software (listserv@infoserv.nlc-bnc.ca) and not the list proper (india-lis@infoserv.nlc-bnc.ca, e-mail address on the internet are generally case insensitive). To subscribe to a list, send an e-mail message to the listserv address with one line in the body of the letter : subscribe listname yourname where listname is the name of the list, and yourname is your full name (e.g. subscribe INDIA-LIS Ajay Kumar Singh). To have your name removed from a listserv, send an e-mail message to the listserv address with one line in the body of the letter: SIGNOFF listname where listname is the name of the list (e.g. signoff INDIA-LIS Ajay Kumar Singh). If you have an article (comments, questions, etc) that you wish to distribute to all members of a list, send it as e-mail to the list address, india-lis@infoserv.nlc-bnc.ca. Other commands necessary for better communication with the listserver will be sent as e-mail on confirmation of your membership.

The INDIA-LIS list will be open and unmoderated to begin with. Any other modifications

imperative on the future development of the forum will be vested with the list owners Central Library, Indian Institute of Technology, Kharagpur and International Federation of Library Associations and Institutions (IFLA), Canada. One can easily visualise the utility of listservs for alerting about conferences/training courses, exchanging/gifting duplicate or less-used information sources, sorting out routine hitches from the actual work place by seeking advice of those who have tackled it earlier, listing about new job openings, etc. The traffic on a LISTSERV list depends on the topic of discussion, current activities in the field, number of subscribers and their nature of communication etc. The Central Library at IIT Kharagpur and the IFLA sincerely hopes that INDIA-LIS should offer the right perspective for such tasks, and seek the co-operation of all library and information professionals in India to mature INDIA-LIS into the next phase of operation, by joining it and by involving into lively discussions with other professionals on INDIA-LIS. Those who are interested to start new listforums can do so by getting familiar with the LISTSERV software and the list owner's manual that can be downloaded from the IFLA WWW site:

<http://www.nlc-bnc.ca/ifla/I/training/listserv/owner.txt>. Research and intellectual collaboration on Internet is hotting up daily and perhaps the infocrats in India will be witnessing more and more networks of invisible colleges in the future by fruitfully utilising the existing forums and starting fresh ones.

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- IASLIC Newsletter, February 1998, p. 3.

Few Library & Information related e-mail Lists

e-mail address	Topic (send an e-mail to listserv/listproc@node to join the concerned list forum)
ACRL@UICVM.UIC.EDU	Association of College and Research Libraries Files
ALCTS@UICVM.UIC.EDU	Association for Library Collections and Technical Services
ALUMNI-L@ILS.UNC.EDU	School of Information and Library Science, University of North Carolina, Chapel Hill Alumni
ARCHIVES@MIAMIU.MUOHIO.EDU	Archives and Archivists
ASIS-L@VMD.CSO.UIC.EDU	American Society for Information Science
AUTOCAT@UBVM.CC.BUFFALO.EDU	Library Cataloging and Authorities
CDROM-L@UCCVMA.UCOP.EDU	CD-ROMs
CHMINF-L@IUBVM.UCS.INDIANA.EDU	Chemical Info Sources
CNI-COPYRIGHT@CNI.ORG	CNI's Copyright and Intellectual Property Forum
COLLDV-L@VM.USC.EDU	Library Collection Development
COLLIB-L@WILLAMETTE.EDU	ACRL College Libraries Section
COLLIBS@IS.SU.EDU.AU	Collection Development in Australian Academic and Research Libraries
CONSALD@MCFEELEY.CC.UTEXAS.EDU	Committee on South Asian Libraries and Documentation
COOPCAT@IUBVM.UCS.INDIANA.EDU	Cooperative Cataloguing
DIGLIB-L@INFOSERV.NLC-BNC.CA	Digital Libraries
ECOLL@UNLLIB.UNL.EDU	Collection Development of Electronic Resources
EMEDIA-REQUEST@VAXI.ELON.EDU	EMEDIA (Electronic Media Issues in Libraries)
GOVDOC-L@PSUVM.PSU.EDU	Government Documents
ILL-L@UVMVM.UVM.EDU	Interlibrary Loan
INDEX-L@BINGVMB	Indexer's Discussion Group

LAW-LIB@UCDAVIS.EDU
LIBADMIN@UMAB.UMD.EDU
LIBREF1@KENTVM.KENT.EDU
LIBJOB@FIREFLY.PRAIRIENET.ORG

LIBJOBS@INFOSERV.NLC-BNC.CA
LIS-L@VMD.CSO.UIUC.EDU
LITA-L@UICVM.UIC.EDU
MAILBASE@MAILBASE.AC.UK

MAISER@ZB.UB.UNI-DORTMUND.DE
MEDLIB-L@UBVM.CC.BUFFALO.EDU
NISO-L@NERVM.NERDC.UFL.EDU
OCLC-JOURNALS@OCLC.ORG
PACS-L@UHUPVM1.UH.EDU
PUBLIB@NYSERNET.ORG
PUBYAC@NYSERNET.ORG

SERIALST@UVMVM.UVM.EDU
SLAITE-L@BABSON.EDU

SLA-PAM@LISTSERVER.LIB.MUOHIO.EDU

SPIN-L@SILVERPLATTER.COM
TQMLIB@CMS.CC.WAYNE.EDU
USMAR@LOC.GOV
VPIEJ-L@VTVM1.CC.VT.EDU

WEB4LIB@LIBRARY.BERKELEY.EDU
Z39501W@NERVM.NERDC.UFL.EDU

Law Librarians
Library Administration and Management
Discussion of Library Reference Issues
Information Professions Employment Opportunities
List
Library related jobs
Library and Information Science Students
Library and Information Technology Association
LIS-LINK (Computer-Based Info and Reference
Services in Libraries)
CDLAN (Integrating CD-ROMs in LANs in Libraries)
Medical and Health Sciences Libraries
US (National) Information Standards Organization
OCLC Electronic Journal Publishing
Public-Access Computer Systems
Public Libraries
Library Services to Children and Young Adults in
Public Libraries
Serials in Libraries
Special Libraries Association Information Technology
Division
Special Libraries Association — Physics, Astronomy,
and Mathematics
Silverplatter Information Network
Total Quality Management for Librarians
USMARC Advisory Group
Publishing E-Journals : Publishing, Archiving, and
Access
Library-Based World-Wide Web Systems
Z39.50 Implementors Workshop



बुद्ध मार्ग प्रतिष्ठान

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College Library

— Problems and Prospects

K.C.A. Majeed*

Introduction

It cannot be underestimated the role of a library in the educational process at any level, especially in colleges which aim at the overall development of students such as personality, skill, communication, career, creativity etc. But how much importance do we give to such an indispensable constituent of the college campus. A well-organised library is essential for the teaching-learning process done in a college, especially when the emphasis is shifted from classroom teaching to learning centred process.

The quality of education is greatly linked with libraries. The information collected and disseminated by libraries decide the quality of teaching-learning process in a college. Most of the education commissions have recognized the importance of libraries in higher education. But in the real situation the college authorities and the faculty are reluctant to accept this truth. They consider the library as an item meant for satisfying the university investigation team. The librarian do not get any role in the college academic programmes. He is treated as a last grade employee in the college. It adversely affect library's activities and services.

Objectives

The objectives of a college library are

1. to provide information sources necessary for teaching-learning process in the subject fields of interest to the college,
2. to aid the teachers to be abreast of the latest developments in their area of specialisation,
3. to develop and maintain reading habits among the students,
4. to aid the students in their personal growth and to sharpen their intellectual curiosity.

Activities

In order to meet the above mentioned objectives, a college library collects, processes and provide a

wide variety of reading materials. It acquires all the textbooks and other reading materials prescribed in the syllabus for the courses offered. It also collects all general books on important subjects and the general and subject journals suitable for the academic community. The reading materials on a subject are selected by the subject faculty concerned. The reading materials of a general character are selected by the librarian. A college library gets maximum fund from college authorities and other sources for acquiring required reading materials for the academic community. The available sources of fund are (i) library fee from students. (2) UGC grant (3) College authority (4) Sale proceeds of dailies and weeklies (5) Grants offered by others.

The acquired reading materials undergo certain processes and after that it reaches on shelves from where a reader can take it for reading or reference. These processes are classification, cataloguing, completion work and shelving. A college library shall follow a numbering system, based on Dewey Decimal Classification or colon classification. Very few libraries use accession number of the document for its organisation. DDC System is popular than to colon system due to its simplicity and ease of location.

Library catalogue is the important tool to identify and locate a document from the library collection. It can be either a dictionary type or classified type. It may be in Register, Card or Computer form. Each type contains author, title, subject, series, collaborator and reference entries. These are meant to meet the different approaches expected on each reading materials in the library.

Accessibility to reading materials are an important factor which affect the utilisation of the collection. The library management prefers closed access, at the same time the reading community prefer open access due to its inherent merits. It provides a variety of service like loan service, reference service, xerox service etc. It maintains an environment suitable for strengthening the reading habit among the users. It also carries out a variety of extension programmes to improve the situation.

There are so many problems to the staff and users of a college library. They affect the day-to-day

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activities and services of the library. The library collections are not effectively used by the student community. This study is an attempt to list out the problems of users and staff of a college library in India. An attempt is made to chalk out the possible solution.

Problems of Library Staff

(a) Shrinking book budget is a common problem in college libraries. Lack of fund for acquiring required reading materials affect the library functions and services. The important sources of bookfund are central and state government, UGC, library authority and students. The contributions of students are very meagre and this money is spent on non-library items. The governments and UGC do not sanction and release their grants in due time so that the librarian does not get an exact idea about the bookfund available for a particular period. As a result he always fails to draw a suitable and reliable acquisition programme for the year.

(b) The high cost of secondary sources or book selection sources like Indian National Bibliography, Books in print etc do not permit the librarian to acquire them with the insufficient bookfund. He greatly depends on publisher's catalogue and books on approval programme of local publishers to select required materials. This practice greatly affects the quality of library collection.

(c) The librarian acquires the required subject materials on the basis of the recommendations made by the Head of the department of the subject concerned. They do not submit the list of new documents required in due time which results in lapse of fund allotted for that particular department. There is no provision to use the allotment for one subject/department to another.

(d) Most of the libraries function in small rooms similar to classrooms. Lack of separate library building or inadequate space area hinders the overall development of the library. The necessary items like shelves, catalogue cabinet, tables and chairs, lights and fittings, ventilation etc are inadequate. They keep the reading materials on bare floor. The present system does not permit the librarians to weed out the damaged and unused books from library collection. It makes the space problem more acute. Regular change in syllabus and prescribed textbooks increase the number of unused books in the library.

(e) There are one professional and one or two non-professionals in a library. The number of

professionals and non-professionals to a college library is fixed on the basis of the number of documents in the collection and the number of documents circulated in a year. It does not consider the volume of work to be done on each material like accessioning, classification, cataloguing, maintenance, services etc. The inadequate staff adversely affects the timely reach of the materials to the users.

(f) In recent years, the audit group of state government and the UGC insist to record all loan transactions in registers. Most of the college libraries use Browne charging system for recording the loan transactions. The present rules increase the time requirement and the labour work required on one loan transaction.

(g) There is a practice of putting a senior professor as incharge of the library. This is not good. The touch of professional skill and interest is lost in such a practice. It also affects the free and effective administration of the library.

(h) A college library is one of the largest unit in a college. It is larger to a department. It enjoys major portion of the college budget. The functions of a librarian are more or less same to the sections of a department head. Eventhough the librarian is the head of a larger unit, he is not treated at par.

(i) The library staff do different library jobs like acquisition, classification, cataloguing, maintenance etc for providing document services to the academic community at the earliest. They work hard to complete these works in time to make the service fast. At the same time, the users do not show any interest on these services. It adversely affects the interest of library staff to work hard and to introduce more and more services to users.

(j) The library authority is not at all interested to improve the library conditions or to introduce new services even if the library staff are ready to do more work for improving the situation.

The above mentioned problems are very serious and greatly influence the day-to-day works of library staff. The library activities and services are affected.

Problems of Users

Students are not generally well versed with the way in which library collection is developed and the service is organized. The classification and the different types of catalogue seem to be complicated. They are complex in nature.

(a) The closed access system still predominates fully or partially in the majority of college libraries. It does not permit the users to select the required reading materials freely. The user has to select their documents based on the library catalogue alone. Once the library catalogue is consulted and selected a document, the user has to wait for a library staff to get the document from the closed almirahs. In most cases, the user has to accept a document which is not the selected one or has to go back with free hand.

(b) The classified organization of materials pose another problem of locating documents from shelves, even if the library offers open access system. The numbers indicating each subject and the filing order of these numbers are not friendly to the users. The problem becomes more complicated when libraries follow colon classification system introduced by Dr. S.R. Ranganathan.

(c) Readers complain that the library authority or librarian is not at all interested in improving the facilities and services offered. The library staff try to avoid the presence of users in library. Lack of user orientation and counselling service in library make the user's problems more acute.

(d) A college library keeps the reading materials on one subject in different places according to the form of material, category of users expected etc. One category of user is not allowed to use certain from of materials or materials available in other section meant for another category of users. It makes a feeling among the users that the library does not consider their information needs.

(e) A library catalogue is difficult to understand and use. It follows certain traditions or conventions. The classified filing of catalogue entries, lack of title entries, filing of author entries according to surname etc pose problems to users.

(f) Most of the libraries insist the students community to return all loaned documents before the issue of examination hall tickets. This practice adversely affect the preparation for and in the performance of their examination. Such rules are imposed due to the fear of loss of books or with the feeling that the students may not return the documents after the completion of examination. This is against the first law of library science.

(g) Issue of document is the main work of libraries. A college library categorizes students on the basis of courses and allot a specific day and time for issue of documents to each category. This time may

be during class hours. It adversely affects the use of library resources.

(h) Certain library rules enforced on the users are rude and unscientific. If a user loses a document issued to him, he has to replace the lost one or to pay a compensation fixed by the Principal. Usually the amount of compensation is equal to three times of the cost of lost book. If a user returns a damaged document issued to him, he may be made responsible for the damage not caused by him. It would discourage the use of library resources.

(i) The students are unaware about the reading materials other than the prescribed textbooks for study. The teachers or the library staff do not provide such information to the students. The details of all suitable reading materials are necessary to a student as the library lacks sufficient number of copies of prescribed text books. The students avoid visiting the library with an assumption that the available copies may be taken by their friends.

(j) The information about the new arrivals are not properly communicated to the users. Some libraries exhibit the new arrivals at the entrance. This information is available to the regular visitors only.

(k) During free hours most of the students visit the library for reference purposes. At this time, there won't be any reading table free for use. The number of seats are insufficient compared to the 'Users' strength. Also the library does not permit a student to take a reference book for outside consultation. As a result the students cannot utilise the reference collection in a well manner.

These problems are common in college libraries, especially in developing countries like India. It greatly affects the growth and development of these libraries as well as the utilisation of the library resources and services. They fail to fulfil the basic objectives. So it requires serious consideration.

Suggestions

1. In the case of library budget, the librarian has to explore all possible sources of fund like Central and State Government, UGC, CSIR, ICSSR, UNESCO, UN, Voluntary Organizations, and Individuals. The UGC offers bookbank assistance to all college libraries which satisfy the 2(F) and 12(B) clauses of UGC Act. The library authority should develop an endowment fund with the help of PTA, Voluntary Organizations, Old Students Association and other well wishers of the college. It can be used at the time of scarcity of fund or when there is a unusual delay in sanctioning and releasing of government or UGC

grants. The prior information of the amount sanctionable to a library by true sources will enable the librarian to chalk out the plans and programmes in right time.

2. The library fee collected from the students should be exclusively used for the college library. The library shall use the amount for acquiring needed basic accessories, stationeries, binding items etc.

3. The library should subscribe atleast one national level books selection tool like INB, Indian Books in print etc. It will contain the bibliographical details of forthcoming publications. It should be supplemented with selection of books on approval basis.

4. The library should be housed in a separate building as far as possible. If this is not possible, it must be housed in a spacious hall in the college premises, or sufficient number of rooms should be used for the library purposes. The library authority should approach philanthropists and industrialists who generously contribute to building funds to memorial buildings.

5. The Government should revise the library staff formula liberally. There should be provisions to appoint ad hoc employees for completing pending library works. Librarian should make use of the provisions for appointing library trainees. The college authorities and PTA should make such arrangement for appointing temporary staff and their payment from the consolidated fund.

6. The librarian should do all his effort to convince the library authority and teaching community that the library is a part and parcel of teaching learning process. He should conduct lectures, exhibitions, seminars etc on topics of interest to the academic community. The students should be informed that literature other than prescribed topics are available in the library. He should also participate in all important programmes that may bring a good feeling that the library is an important part of the college.

7. The closed system of access should be selected as a last resort. It should be limited to abnormal sized, rare and out of print, illustrated and costly materials. The students should be directed to place the books taken from the shelf on the reading table. The library staff should conduct stock rectification on a regular basis to avoid misplacement and hiding of books.

8. The librarian should draw a suitable user education programme. It will help the students in

their pursuit of life long education. Newly admitted students should be considered first. At least three or four library hours should be assigned for all first year students. The librarian should give a lecture on library in all classes and separate timing should be followed for library visit. A library manual should be prepared and circulated among the students. Lecturing followed by library tour is found most suitable for college students. The lecture should cover all important aspects that are necessary for the use of library collections and services.

9. The books issued to the students should not be called back before the examination is over. Issue of examination hall tickets and non-dues in library should not be correlated. A serious student will not take away the library books. UGC and Central Governments have recognized the inevitability of loss of books and have approved 3 books per 1000 circulated books as reasonable loss and that can be written off.

10. There should not be any specific timings to different category of students for issue and return of books, or they should be permitted to take books on loan during free hours.

11. Library rules should be made simple and easy to follow. Strict rules are to be relaxed to avoid unnecessary problems to students. Genuine cases of loss or damage of books should be treated favourably and sympathetically.

12. The librarian and teachers should direct the students to the information sources, suitable for study and reference, available in the library. Teachers should insist the students to prepare the notes themselves. A list of new arrivals should be prepared and circulated among the students or it should be exhibited on the student's and teacher's notice boards.

13. Teachers should take the students to library during free hours and show and explain the sources and services suitable for them. The students should be motivated to use them. Teachers should be a Model to the students in the use of library collection.

14. The students should be permitted to take reference books to their classrooms for consultation, for one or two hours. Free class rooms adjacent to the library should be made use of for consulting reference books.

15. Various extension programmes like exhibitions, library week, lectures etc should be conducted to attract more students to the library. □

Valuing the Values

R. Devanathan*

Introduction

Man and values are inseparable. If man becomes stronger with education, it is the third force, the values, that brings forth wholeness to life and makes him the strongest. Life sans values becomes a series of meaningless activities. (Pro. N.K. Dutt). As John Hospers points out that most of us are brought up to follow certain moral values. The great saint turned King Bhatruhari says —

*Ahara Nidrabhaya Maithunam Ca
Samanyametat Pasubhirnaranam
Dharmo hi tesamadhiko Viseso
Dharmena hina Pasubhis Samanah*

Eating, sleeping, fear and copulation are common among men and animals. But it is Dharma which distinguishes man from animals. If man does not possess this special feature Dharma, he ceases to be a man. Holy Prophet said "The Muslims who possess better morals are the most perfect in faith." It is clear that every religion advocates the importance of Values.

Increase in the materialistic attitude and decrease in the power of understanding the difference between religion and values contribute mainly to the present day restlessness.

If we study the pre-independence and the post-independence educational reports and the changes that took place, one dare to conclude that we have talked a lot but have shown nothing in action. "Quite a large part of our educational discussion is like lecturing on navigation while the ship is going down" (V.V. John in Quest 1972).

Pre-Independence Era

In the Pre-independence period, the Hunter Commission (1882) after surveying the whole educational system observed that an attempt be made to prepare a moral text book, based upon the fundamental principles of natural religion, such as may be taught in all Government and Non-Government colleges." It further stated that the responsibility of moral instruction should be borne by the Principals or the Professors of the colleges. But unfortunately the then Government accepted all the proposals of the commission except the proposal on moral instruction.

The subsequent two commissions, the Indian University Commission (1902) and the Calcutta University Commission (1917-19) did propose nothing and

failed to suggest any measure to impart religious/moral instruction.

In 1929 the Hortog Committee indirectly considered the importance of morality. The Committee expressed its wish that the universities should inculcate the values of tolerance, self confidence etc in students. Later the Basic Education System (Wardha Education Plan) of Mahatma Gandhi discussed in detail the place of religious and moral instruction. Gandhiji was of the opinion that religious instruction should not be provided at the cost of the State. He preferred to exclude religious education from his Wardha Plan. But contrary to his observation the Central Advisory Board of Education (1945) recommended that spiritual and moral teaching should be an integral part of the curriculum and provision for instructions therein should be the responsibility of the State.

Post-Independence Era

Post-independence era projects the different scene. Almost all the commissions and committees felt the need for moral and spiritual instruction at different levels of education.

Indian University Commission (Dr. Radhakrishnan Commission 1948-49) clearly stated "if we exclude spiritual training in our institutions we would be untrue to our whole historical development."

The Indian Constitution in Article 28 says "No religious instruction shall be provided in any educational institutions wholly maintained out of State funds." But the Constitution itself contradicts this view in Article 30(2) that there shall not be any discrimination in granting aid to an institution on that it is under the management of a minority based on religion or language. The implications are :

Firstly, Minority institutions may be granted financial assistance for propagating their religious or spiritual values.

Secondly, the Constitution encourages subjects to establish their own institutions under minority banner and preach religious and moral values.

Thirdly, it clearly reveals that the State shall not have any objection against the institutions which impart religious or spiritual instruction on their own funding.

Finally, the State indirectly encourages the value based instruction.

The report of the Secondary Education Commission (1952-53) headed by Dr. A.L. Mudaliar the Vice-chancellor of the University of Madras, under scored the value of the value education after goin

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through the provisions laid down in the Constitution, religious and moral instructions also play an important role in the growth of character. It suggested that provision for the same may be made on a voluntary basis, outside the regular school hours with the consent of the parents.

In the fifties itself Sri Prakasha Committee on Religious and Moral Instruction (1959) boldly opined "Many ills that our world of education and our society as a whole suffering today, resulting in widespread disturbance and dislocation of life are mainly due to the gradual disappearance of the hold of the basic principles of religion on the heart of the people... the only cure, it seems to us, is in the deliberate inculcation of moral and spiritual values from the earliest years of our lives."

Later the first Indian Education Commission of Independent India considered the question of values and cited the reason for the down trend: "The weakening of social and moral values in the younger generation is creating many serious social and ethical conflicts. It is therefore, necessary and urgent to make our education value-oriented. "It further recommended that conscious and organized attempts be made for imparting education in social, moral and spiritual values with the help, wherever possible, of the ethical teachings of great religions."

The Government after receiving the report of the Kothari Commission, sincerely constituted a Parliamentary Committee to go through the report and to suggest the feasibility of its implementation. The committee in its recommendation also emphasised the inclusion of the study of the great universal religions, the rendering of social service to the community and participation in games and sports and hobbies, will contribute to the formation of right attitudes and values.

Consequently the first National Policy on Education (1968) and the latest NPE (1986) considered the importance of values and made due provisions for imparting the values.

The Concept of Values

Contrary to the observations of all the commissions and committees, nothing has happened significantly to promote value-oriented education.

Coleridge said "Man may be made better not as a consequence of education but during the process of education." Hence it is the process which brings in changes through values. Because "a Civilisation is not built with brick and mortar or steel and machinery, it is built with men, their quality and character" (Dr. S. Radhakrishnan).

Here the point of discussion is not to advocate religious teaching, rather to understand the interdependability of religion and values. If we

consider the views on values expressed by eminent persons, we can understand the concept more precisely. Values are defined as socially approved desires and goals that are internalised through the process of conditioning, learning or socialisation and that become subjective preferences, standards and aspirations. (R.K. Mukherjee in Social Structure of Values). The second view is, which also detaches religion from value, that persons have experiences, they grow and learn. Out of experiences may come certain general guides to behaviour. These guides tend to give direction to life and may be called values. (Rath and others in Values and Teaching).

It is obvious that these views give importance to experiences which are the resultant behaviours of social interaction. It necessarily includes religion in one form or another as a facilitator.

Hence moral value through religion is as much a secular concept and a part of our existence.

Need of the Hour

What lacks today is the role model. Because thought only cannot bring in changes. "The thoughts of intellectuals are like arrows in a quiver which scratch the back but never get into action." (Mao-Tse-Tung).

Education alone is not responsible for the qualitative improvement of values. There is every possibility, that one may be humiliated not because he is under-educated, but because he is over-educated without values.

The lacuna lie with the teachers in particular and the elders in general. What a teacher advocates to his pupils, is hardly practiced by the advocator himself. If a coach himself does not have the skills that are required for a game, then how can he inspire the trainees.

The writer conducted a survey and found that most of the teachers either do not attend the moral instruction period or prefer to teach the subject they handle. The values can be effectively imparted through lectures, textbooks, epics and several co-curricular and extra-curricular activities and the young mind does catch them. But when they find elders, teachers and leaders in the society going the other way, they suffer from moral conflicts. This attitude among teachers and elders must change.

The time has come to change our attitudes and present ourselves as a role model before the pupils and teach or make them follow values through action. If we fail to match the changes in our material existence with appropriate social and educational values, the deterioration will march further. I conclude with these Taittiriya Upanishadic words "Do whatever you deem right. If you are in a fix, follow men of character and righteous persons." We prepare ourselves and behave as men to be followed. □

Re-engineering Vocational Education

Santosh Arora*

Concept of vocational education in India is not new. Good education aims at the development of balanced personalities who are culturally refined, emotionally stable, ethically sound, intellectually alert, socially efficient, spiritually upright and physically strong. Good education also aims at developing men who can play as well as work; men who can consume as well as create. Vocational education grows out of such an education¹.

It should always be underscored that vocational education is not offered in lieu of general education, but grows out of it. Supplementing and enhancing is the ultimate goal of our education system. The main goal of vocational education is to fulfil the manpower requirement for national development and the social requirement for employment. Based on these goals the objective of vocational education at +2 level are :

- * To fulfil the national goals of manpower development and the removal unemployment and distribution.
- * To impart education relevant to productivity, National development and individual prosperity.
- * To meet the need of middle level manpower for the growing sectors of economy.
- * To divert a sizeable group of students to various vocational courses.
- * To prevent a rush to general education at higher level and attract to attach the student to various vocational trades.
- * To prepare students for self reliance and employment.

After independence the Mudaliar Commission on Secondary education argued for the diversification of course at secondary stage. The Kothari Commission was very clear in suggesting a vocationalization of two year higher secondary education after ten years of general education. After 20 years of Kothari Commission, National Policy on Education (NPE) (1986) accorded a very high prior-

ity to the programme of vocationalization of education.

Causes of Slow Progress and Remedies

After completing so many years of implementing the vocational education programme we have very slow progress in this line. There are many issues and problems that are responsible. Some of these problems are

Curriculum

The vocational courses are not based on social need. 75 per cent population lives in rural areas, but it is unfortunate that agriculture trades are not provided in rural schools. Majority of institutes offer the trades such as Banking, Type writing, Photography, Dress Designing, Shorthand etc. Thus institutes do not offer vocational courses as per the need and demand of the society.

In order to vocationalize the education, curriculum should be of higher relevance needbased. Agriculture, Horticulture, Mushroom culture, Sericulture, Bee keeping etc. should be offered at large scale. Maximum vocational trades should be introduced for girls. Trades that could make them self reliant are such as Printing, Knitting, Craft, Food Preservation, Tailoring & Cutting, Creche Management, Health care, Soft toys making etc. It will be more effective to run vocational trades under one stream rather than the present system where different trade are runs under different streams like, Banking under Home Economics, Banking under Business and Marketing, Photography under Science and Technology etc.

Admission

The selection of students for vocational education is not based on students' ability, aptitude, interest etc. There is no uniform pattern for the selection of students in vocational stream.

A scientific method should be used for the selection of students. The selection of students must be decided upon their interest, ability and aptitude etc.

Instructional Material

There is want of textbooks and instructional materials. Textbooks are not available sufficiently

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in all regional languages. Though many states have developed all instructional material for several courses; textbooks and guidelines have not yet been printed for the use vocational teachers. The non-availability of learning material is a serious problem in teaching learning process. In many trades there are no prescribed books for the theory and practical to enable the students to self study so students have to depend on teacher's notes only. Hence textbooks and instructional material should be developed and made available in respective local languages. The mass media like radio, T.V. and films should be extensively used for creating awareness about vocational education programmes.

Teacher

The faculty is the heart of any academic programme. At present qualified and trained teachers are not available for many vocational trades. There is no provision for full time vocational teachers for specific vocational trades in many institutes and most of the vocational education programmes are mainly run by guest teachers.

For the successful implementation of vocational education programme, technically qualified full time vocational teacher and instructor must be appointed in vocational institutes. A comprehensive service teachers' training and refresher courses should be organized by NCVE, DIET and other universities. Kulandai Swami suggested that TITI, RCF, TTC, CTI should organize the training of vocational teachers. Full time preservice training programmes should be organized by the universities and teacher training colleges. In this direction, Institute of Advanced Studies in Education, MJP Rohilkhand University, Bareilly has taken very good step by starting B.Ed. in Vocational Education.

Financial Support

One more burning issue is the financial support. The main problem is that the state government is not fully financial supporting these courses. For the starting of vocational education programme, one term grant was sanctioned from the State Govt. which is for the construction of workshop, purchase of equipment and textbooks preparation of instructional material aids etc. But there is no provision of any maintenance grant or purchase of raw material for the practicals. Due to this, most of the equipment is put in the stores, hence they get damaged or out of order. Therefore, students do not get opportunity to conduct practical work which is most important part of curriculum.

Therefore, Government of India should provide liberal financial support to vocational education. At the centre level also vocational education should be given top priority and also adequate grant should be provided for the equipments, textbooks, raw materials and maintenance of equipments etc.

On-the-job-training

On the job training is key component in the vocational education programme. The purpose of this training is to make students familiar with the atmosphere and problem of actual working condition; but it is unfortunate that the provision of on the job training is very little and unsatisfactory. All the vocational courses are not yet covered under the Apprentices Act; therefore facilities for apprenticeship training are limited. Several states could not provide suitable training placement for these students.

Study tour, on the job training and apprenticeship are the important components of successful vocational training. Two months time can be allocated for these activities. Linkage between vocational education institutes and employment exchanges / industries is necessary. With such efforts proper climate of self employment could be generated. This linkage will be helpful for the students to up small scale industries such as Dairy farms, Candle industry, Match box industry, Plastic work etc.

Conclusion

It is evident that the progress of vocational education programmes has been very slow. Several problems are creating hurdles in successful implementation of vocational education programmes. These problems are mainly related with the curriculum, training, methods, faculty, funds facilities and availability of resources etc. Firstly we should remove the hindrances for implementation of vocational education programmes and then achieve the objectives of vocational education.

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Graduation—A Milestone in the Journey of Learning

Dr. Hari Gautam, Chairman, University Grants Commission delivered the Convocation Address at the 13th Convocation of Thapar Institute of Engineering & Technology (Deemed University) Patiala. He said "Education is a life time process. Graduation is not the end but a milestone in your journey of learning. You have to keep learning in order to remain up to date in knowledge in the modern society. I may inform you that higher education has a beginning, but no end. A new chapter is now to begin in your life." Excerpts

Young friends — this is an important day in your life as before you now lies a challenge and responsibility to shape your career and future prospects both in Technical Education and Professional pursuits. Today, you are standing on a bridge between the past and the future. Your education does not end with the degree. Knowledge is not the subjects you have studied. Education is not the total marks and merit positions/awards you have obtained. Your personality is not merely a collection of testimonials and certificates.

Education is a life time process. Graduation is not the end but a milestone in your journey of learning. You have to keep learning in order to remain up to date in knowledge in the modern society. I may inform you that higher education has a beginning, but no end. A new chapter is now to begin in your life.

Life belongs to the livings and ones who live to learn to face challenges. You have innumerable opportunities before you. Your potentials are immense. You are in for exciting times. Use your discretion. Evaluate all issues and make firm determination of your choice. Work hard to attain your chosen career with care and sincere commitments. Remember that the opportunities are awaiting you. It is for you to make serious efforts. I

want you to dream and make all out efforts to make your dreams a reality. But also keep a space for yourself as a person. Think about what you are, what you want to be, what are your personal objectives and what interests you.

I wish you all the best and pray God for success in shaping your future career. Remember that whatever you do and wherever you are — you shall always be an Indian and more so an alumnus of Thapar Institute of Engineering and Technology. Your doings and deeds shall bring credit both to your motherland and your mother Institution. Plan your career with care and caution. Nothing is impossible to achieve. Learn to use the word "impossible" with greatest caution. May God be with you.

You would now be spread in many directions. One thing shall be common and be always with you — that is the sense of responsibility this Institution has planted in you. After decades of your working career, you would still remember the period you have spent in this deemed university and you may look back at these golden years as the ones most important in your life.

We are aware that the Thapar Institute of Engineering and Technology — a deemed university has earned reputation of being a lead institution in the Engineering Edu-

cation. This calls for an excellence and added responsibility that you the graduates have now to go with in order to keep up the name of your alma mater.

Rightly it is said that good students make good university. It would not be an exaggeration if I say that good students are an even better assurance for a high quality university than good Professors. You belonging to this category, have positively contributed to the pace and progress of Thapar Institute of Engineering and Technology. Your generation, I hope will transform the future even more profoundly that what the elder generation has been able to achieve. The world is on the upswing and you ought to be destined to play your due part in shaping India's future.

Degree programmes in Engineering and Technology have been the prime choice for the school leavers in our country. In the Joint Entrance Examination for admission in IITs more than one lakh students compete for merely 2,500 seats. India has to date 662 Institutions offering degree level technical education wherein 1.56 lakh students are annually enrolled. Besides, we have 1171 Polytechnics awarding diplomas with an annual intake of little over 2 lakh students.

The Panorama of quality of institutions providing engineering education has alarmingly been not only most disturbing but shocking as well. There have been the institutions whose performance cannot even be taken as satisfactory. There are institutions which hardly possess anything in the name of either the infrastructure or the desired faculty profile. It is the result of the mushroom growth of engineering colleges of late.

On the other hand, however, there are pride institutions in engi-

(Contd. on page 22)

Gender Gap in Education

HDI rank	Female adult literacy			Female primary net enrolment			Female secondary net enrolment			Female tertiary students			Female tertiary science enrolment (as % of female tertiary students) 1995
	Rate (%) 1997	Index (1985 = 100) 1997	As % of male rate 1997	Ratio (as % of relevant age group) 1997	Index (1985 = 100) 1997	As % of male ratio 1997	Ratio (as % of relevant age group) 1997	Index (1985 = 100) 1997	As % of male ratio 1997	Per 100,000 women 1996	Index (1985 = 100) 1996	As % of males 1996	
High Human Development	—	—	—	99.3	101	100	94.5	106	101	4,227	134	105	24
1. Canada	—	—	—	99.9	100	100	94.4	103	98	6,329	93	112	27
2. Norway	—	—	—	99.9	103	100	98.0	112	101	4,564	195	121	—
3. United States	—	—	—	99.9	106	100	96.2	100	100	5,844	112	121	13
4. Japan	—	—	—	99.9	100	100	99.9	104	100	—	—	—	24
5. Belgium	—	—	—	99.9	100	100	99.9	100	100	—	—	—	27
6. Sweden	—	—	—	99.9	100	100	99.9	117	100	—	—	102	25
7. Australia	—	—	—	99.9	100	100	96.0	108	100	5,608	250	89	17
8. Netherlands	—	—	—	99.9	100	100	99.9	100	100	2,986	132	—	—
9. Iceland	—	—	—	99.9	100	100	88.1	115	101	—	—	98	24
10. United Kingdom	—	—	—	99.9	100	100	93.2	103	103	3,102	192	115	30
11. France	—	—	—	99.9	100	100	98.6	99	100	3,850	169	59	15
12. Switzerland	—	—	—	99.9	100	100	80.3	106	92	1,541	146	106	23
13. Finland	—	—	—	99.9	100	100	96.2	103	102	4,303	174	77	21
14. Germany	—	—	—	99.9	100	100	94.9	112	99	2,287	—	119	28
15. Denmark	—	—	—	99.9	100	100	95.4	112	101	3,468	157	90	26
16. Austria	—	—	—	99.9	100	100	97.1	108	99	2,816	142	—	—
17. Luxembourg	—	—	—	—	—	—	—	—	—	—	—	—	31
18. New Zealand	—	—	—	99.9	100	100	94.0	107	102	4,990	187	124	33
19. Italy	97.8	102	99	99.9	100	100	96.0	136	102	3,197	171	106	33
20. Ireland	—	—	—	99.9	100	100	99.9	103	100	3,656	213	102	—
21. Spain	96.2	103	98	99.9	100	100	93.0	104	102	4,164	178	108	32
22. Singapore	87.0	111	91	90.5	93	98	74.8	112	98	2,250	201	81	19
23. Israel	93.4	104	96	—	—	—	—	—	—	—	—	—	36
24. Hong Kong, China (SAR)	88.4	110	92	93.2	95	104	71.5	97	107	640	—	156	28
25. Brunei Darussalam	86.0	118	92	88.5	113	101	83.9	100	105	1,130	205	69	27
26. Cyprus	93.5	106	95	—	—	—	—	—	—	2,998	170	91	38
27. Greece	94.9	107	97	99.9	100	100	93.1	114	104	—	—	—	44
28. Portugal	88.3	110	94	99.9	100	100	91.0	151	103	2,965	—	138	16
29. Barbados	97.0	102	99	94.5	95	95	83.1	105	94	4,182	196	60	—
30. Korea, Rep. of	95.5	105	97	99.9	100	100	99.9	116	100	—	—	—	21
31. Bahamas	96.4	102	101	99.9	101	113	95.9	103	130	—	—	—	29
32. Malta	91.7	106	101	99.9	103	100	83.3	101	96	—	—	—	29
33. Slovenia	99.0	100	100	—	—	—	—	—	—	2,985	185	119	43
34. Chile	94.9	103	100	89.2	98	97	87.2	115	105	2,291	163	82	25
35. Kuwait	77.5	113	93	64.0	75	96	63.2	74	100	2,590	151	134	42
36. Czech Republic	—	—	—	99.9	100	100	99.9	108	100	—	—	—	—
37. Bahrain	80.7	121	90	98.8	99	101	90.8	93	108	—	—	—	36
38. Antigua and Barbuda	—	—	—	—	—	—	—	—	—	—	—	—	—
39. Argentina	96.5	102	100	99.9	103	100	79.8	107	108	—	—	—	44
40. Uruguay	97.8	102	101	94.8	107	101	86.7	110	112	—	—	531	—
41. Qatar	81.2	114	102	84.5	88	103	72.0	90	97	3,278	116	96	—
42. Slovakia	—	—	—	—	—	—	—	—	—	1,864	—	608	31
43. United Arab Emirates	76.8	115	104	81.3	103	98	79.9	153	105	1,721	200	121	—
44. Poland	99.0	101	100	99.3	100	100	88.5	113	105	2,058	155	—	—
45. Costa Rica	95.1	103	100	92.5	110	102	56.9	109	104	—	—	71	—
Medium Human Development	—	—	—	88.5	109	95	59.8	129	86	662	—	—	—

Source: Human Development Report 1999, UNDP.

(Contd. from page 19)

neering and technology with high index of quality and assurance providing a superior education comparable to even the best available in any part of the world. If we walk along the roads in a metropolitan city, you will find the pedestrian, the cattle, the bullock cart, the cycle, the autorickshaw and the most modern automobile — all moving along. A similar situation exists in our society at large. Likewise we have the best, good, not so good and even the worst Institutions of Technical education — all co-existing in our country.

Naturally, therefore, the graduates of wide variation in competence and culture are being produced in these institutions. While the IITs and other reputed institutions are able to market their produce in India and abroad, a large portion of engineering graduates in the country remain unemployed immediately after leaving the second or third grade institutions. Many remain under-employed while some may continue to be labeled as unemployed.

Decisive and effective measures have to be taken to curb this inferior quality education. India cannot afford to have the so called acceptably well taught and trained professionals, may it be in medicine or engineering who lack the desired competence, talent and degree of information knowledge they ought to have been equipped with before leaving the portals of the institution of higher education. The whole issues need to be re-examined. A re-look has to be enforced and review of all these institutions may have to be done with the prime objective in mind that only those who deserve to exist are allowed and those which do not are closed forthwith.

Some fundamental changes are necessarily required in the planning

and organisation of Engineering Education. It is, however, more important and pertinent as well to safeguard against mistakes than to unnecessarily expand. The lead times in Education, in general, and Engineering Education, in particular, are long, and unless we plan ahead reasonably accurately, we would be unable to fulfil our obligations effectively. There is an urgent need to develop an academic integrity, accountability, an updated curriculum and to reform the engineering education.

In order to succeed in our efforts for providing the much needed improvements in the course curriculum, it is absolutely essential that the dons in the educational institutions recognize the need for assessment of skills, aptitudes and knowledge requirements of the industries and organisations which recruit their products. Currently there is a total absence of such a feedback system. The dons overwhelmingly are conscious that it is they who know the best and it is they alone who can decide what is best for the academics. It is this blasphemy which is responsible for the daring obsolescence of the course curriculum and a deadlock on the interaction with the industries. The dons must understand that because of visible compulsions of global competitiveness the industries foresee the technology and human resource requirements faster than the institutions do.

There should be involvement of the students in the real-life situations while they are still at the studies. Special courses with a committed intake designed specifically for the industries can also help develop the relevant human resource. The training and retraining of engineers can also be ensured through such linkages. Academic-Industry linkage has become a vital link which can no longer be ignored now and

in future. The corporate sector has universally recognised the importance of quality in their products and services for achieving and sustaining competitiveness.

The Engineering Education sector, however, has been rather slow to act in this respect. We must recognize the role of quality in achieving our identified Mission and Vision. Besides, we ought to incorporate into the Engineering Education system — the curricular content relating to knowledge, skills, attitudes and orientation to enable the technological profession to practice in inter-disciplinary and multi-cultural contexts for solving the intricate problems lying ahead.

Introduction of new courses keeping pace with the developments and updating of the curriculum should help. An effective quality control, monitoring of the academic performance to maintain the standard of education, examination and research in all the institutions should constantly be undertaken. The good be rewarded and the ones not upto the mark be punished for their failure. Incentives and awards both for the institutions and individual teachers be instituted for good and the excellent job they do. An effective deterrent be imposed on those who repeatedly fail to deliver the expected output.

Having hundreds and thousands of universities and colleges, we have to have a system to know 'who is who' and what is being done by whom. Accreditation and assessment score must be obtained by each and every institution and be displayed for a wider consumption. This not only will encourage competitive spirit among the institutions to perform better but shall also let the people at large know the quality of educational institutions existing at any given time in India.

Something of no lesser concern is the multiple examination being

conducted in our country. We have JEE-IIT, CEE, DEC, entrance examination of different universities and that of state level colleges. It is too much for the students to go through the ordeal of appearing in so many entrance tests besides paying multiple application/examination fees and incurring other expenses thus imposing an economic hardship on the poor and middle class families. It is high time that we resorted to a single all India entrance examination in engineering and technology. I hope it may become a reality in future.

There can be no two opinions that the role of a teacher is vital in the growth of technical education and in upholding the quality of human resource development. What is however not unanimously upheld is the view that the teacher in an engineering institution should devote not only to teaching but also to R&D on Industrial consultancy. The students in engineering institutions are to be taught by those who take pains in sustaining the interest of the students by constantly updating their teaching material while at the same time commanding a high reputation as practicing technologists, something similar to what is done in medical colleges.

Higher Education will have to become internationally competitive. It must be emphasized that any country, which does not have good technical education, will never be given the importance and respect of a really independent country. Only countries prepared to tolerate second-rate and subjugated status in the world will neglect the technical and professional education.

All said and done it is not so easy to achieve. There has to be a will, a commitment and a go ahead feeling atleast in few if not all of us who could accomplish this formidable task of reforming the engi-

neering and higher education. We need a leader in higher education, a leader in technical education, a leader who shall serve the cause of education at large to provide the much desired benefits to the nation. The new urgency is how to prepare the nation to meet the future. The nation requires a firm sense of direction and leadership which is committed to make the future happen. To lead this movement of reforming the technical and higher education, we need new leaders who will innovate, promote innovation, who will dare, who would set the goals and who will also take risks.

Dr. Manmohan Singh, former Chairman, University Grants Commission and Finance Minister, Government of India while addressing the Convocation of Banasthali Vidyapith in March, 1999 said —

"India's vast human and material resources, if properly mobilised, ought to make India the most successful story of the first half of the Twenty-first Century. Here then is a challenge for all of us: to nurse and encourage the right type of lead-

ership so vital for our well being and the well being of our children and grandchildren."

The 'Afterword' in the book "India 2020" written by Bharat Ratna Dr. APJ Abdul Kalam says—

"India is a nation of a billion people. A nation's progress depends upon how its people think. It is thoughts which are transformed into actions. India has to think as a nation of a billion people. Let the young minds blossom — full of thoughts, the thoughts of prosperity."

With all this vision for the mission ahead — let us hope and believe that we shall rise to the occasion and do what is expected of us — to serve the cause of higher education and to bring in the necessary reforms in this system.

I congratulate the graduates and compliment this Institution for having taught and trained them and look forward in near future for more meaningful improvement and innovation in the Engineering Education at the Thapar Institute of Engineering and Technology. □

PANJAB UNIVERSITY, CHANDIGARH

(Advt. No. 5/99)

Applications are invited for the following posts in the Department of Anthropology, to reach Deputy Registrar (Estt.), Panjab University, Chandigarh, by 29.11.1999:

1. LECTURERS-2 (Grade Rs.8000-275-13500)
2. RESEARCH ASSOCIATE-1 (Rs.8000/8800/10500 (fixed))

15% posts of Lecturers will be reserved for members of Scheduled Castes and 7% for members of Scheduled Tribes but these will be treated as unreserved if no suitable Scheduled Caste/Scheduled Tribe applicant is available.

The Vice-Chancellor could place before the Selection Committee names of suitable persons for its consideration alongwith the applications received in response to the advertisement. The number of posts can be increased or decreased as per requirement at the time of selection.

Application form alongwith 'Detailed Instructions' containing qualifications, etc. can be had either from Cashier, Panjab University, Chandigarh, on payment of Rs.75/- (Rs.30/- for SC/ST candidates) or from Deputy Registrar (Estt.) by sending a crossed A/c. Payee Bank Draft payable at Chandigarh of same amount in favour of Registrar, Panjab University, Chandigarh, accompanied by a self-addressed stamped (worth Rs.9/-) envelope of 30cm x 12cm. Candidates abroad may apply on plain paper with full biodata (ten copies) together with a fee of Rs.75/- by a crossed A/c. Payee Bank Draft payable at Chandigarh in favour of Registrar, Panjab University, Chandigarh.



INDIAN INSTITUTE OF TECHNOLOGY, MADRAS

INVITES applications for the following Faculty Positions:

PROFESSOR : Rs. 18,400-500-22,400

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in the Departments of AEROSPACE ENGINEERING, APPLIED MECHANICS, CHEMICAL ENGINEERING, CHEMISTRY, CIVIL ENGINEERING, COMPUTER SCIENCE & ENGINEERING, ELECTRICAL ENGINEERING, HUMANITIES & SOCIAL SCIENCES (including MANAGEMENT), MATHEMATICS, MECHANICAL ENGINEERING, METALLURGICAL ENGINEERING, PHYSICS and OCEAN ENGINEERING CENTRE.

ASSISTANT PROFESSOR : Rs. 12,000-420-18,300

in the Departments of AEROSPACE ENGINEERING, CHEMICAL ENGINEERING, CIVIL ENGINEERING, COMPUTER SCIENCE & ENGINEERING, ELECTRICAL ENGINEERING, HUMANITIES & SOCIAL SCIENCES (including MANAGEMENT), MATHEMATICS, MECHANICAL ENGINEERING and METALLURGICAL ENGINEERING

QUALIFICATIONS

Ph.D. with First Class or equivalent (in terms of Grades etc.) at the preceding Degree in the appropriate branch, with very good academic record throughout.

EXPERIENCE

PROFESSOR

A minimum of 10 years' Teaching / Research / Industrial Experience of which at least 5 years should be at the level of Assistant Professor / Associate Professor.

ASSOCIATE PROFESSOR

A minimum of 8 years' Teaching / Research / Industrial Experience, of which at least 3 years should be at the level of Assistant Professor.

ASSISTANT PROFESSOR

A minimum of three years Teaching / Research / Industrial Experience.

The fields of Specialisation and Disciplines will be supplied along with the application form, which may be obtained by addressing the Registrar, IIT-Madras, Chennai-600 036, with a self addressed, stamped (Rs. 9/-) envelope (26 cm x 11 cm). The cover must be superscribed "Requisition for Application form for the post of

Applications from candidates in India which are not in the prescribed form will be rejected summarily. However, Indian Nationals residing abroad may apply on plain paper. Applications must be complete with bio-data giving full details of educational qualifications, including year of obtaining Ph.D., Teaching / Research / Industrial Experience, along with names and addresses of three Referees, who may be requested to send the References directly in confidence, to the Registrar, IIT Madras. At least one of the three Referees must be from outside the Institute / Organisation where the candidate is currently working / obtained his Ph.D. degree.

Last date for issue of Applications by post : 06.12.1999

Last date for receipt of completed applications:

From Candidates within India : 20.12.1999

From Indian Nationals abroad : 03.01.2000

NOTE:

1. No candidate will be considered in absentia for regular appointment.
2. Separate applications must be submitted for each Post and each Department.
3. The Institute reserves the right to fill or not to fill any or all the posts advertised.
4. Mere fulfillment of qualifications and experience requirement does not entitle a candidate to be called for interview.
5. No correspondence whatsoever will be entertained from candidates regarding postal delays, conduct an result of interview and reasons for not being called for interview.
6. Canvassing in any form will be a disqualification.
7. All things being equal, preference would be given to SC/ST/OBC candidates

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Date : 3.11.99

REGISTRAR

CAMPUS NEWS

Private Sector in Higher Education

Encouraging the private sector will help to meet the ever-increasing demand for higher education in the country, Prof. K. Aludiapillai, Former Vice-chancellor, Madurai Kamaraj University, is reported to have said this while delivering the convocation address at the 15th Convocation of Bharathiar University. Prof. Aludiapillai said that in the 1980's, the cost of higher education had started rising, while the funds allocated for this sector had begun declining. From 26 per cent in the Fifth and Sixth Plan periods, the allocation came down to eight per cent in the Eighth Plan.

During 1998-99 in Tamil Nadu, there were 104 private unaided engineering colleges out of a total of 114, and 172 private unaided arts and science colleges out of a total of 365.

In the second half of the 20th century there had been a "pronounced preference for the study of science," he said, and noted that the achievements of science had "dethroned" liberal education in the arts and humanities, which had held sway in the first half of the 20th century.

From the time India became independent, there had been an increasing demand for mass education, especially at the college and university level, because academic proficiency was regarded as a "necessary tool for upward social mobility and an indispensable passport to a decent job."

With 7.5 million students and 3.21 lakh teachers in the higher education system, there was a

growing concern over the quality of education in the country.

"A mediocre teacher can produce only a mediocre student. Proper selection procedures can ensure that only the best enter the teaching profession," he said, and stressed that only faculty of the highest quality could produce students of high calibre.

To reform the educational system, Prof. Aludiapillai advocated a programme of "de-centralised academic administration" by conferring autonomy on colleges that had been functioning well for 15 years or more, and which also fulfilled certain criteria.

There ought to be "quality assurance" in education, so that the public knew the "rating and standing" of each institution of higher studies. "Good institutions should be rewarded, and those that fail to reach the required standards should be eased out without harming the interests of students or teachers," he said.

He urged all institutions to opt for assessment and accreditation, as these processes were an opportunity for introspection and self-improvement.

Pointing out that information technology and the world wide web had made it possible for people to become life-long learners, he noted that scientific knowledge was doubling every five years. Students should leave universities with the knowledge relevant to living in society, skills to apply knowledge, and ability to apply knowledge to a changing world.

Joining issue with critics who complained of the "decline in standards of education in the country", he observed that young people had been quick to adapt themselves to technological changes and learn new skills. Lack of communication ability could be easily identified and remedied, and "optional enrichment courses" could function as an adjunct to conventional programmes and help students acquire specific skills needed by employers.

Community colleges offering certificate and diploma course could also serve these needs, and open up self-employment opportunities as well.

Ms. M. Fathima Beevi, Governor of Tamil Nadu and Chancellor of Bharathiar University, distributed the certificates, diplomas and medals to the students.

In his welcome address, Prof. B. Ilango, Vice-chancellor, Bharathiar University, said that PSGR Krishnammal College for Women had excelled by obtaining 74 out of the 138 university ranks in the May 1999 university examinations.

Course on Insurance

A special course on 'Insurance' was reported to have introduced at St. Francis College for Women, Hyderabad from the current academic year. The course is conducted by the College, in association with the College of Insurance and Financial Planning, Secunderabad. The study programme on insurance and related subjects are implemented for the benefit of the Final Year students of the B.Com. (Professional) course. The inaugural ceremony

held recently witnessed the presence of the esteemed guests of honour, Shri B. Krupanandam, Director of Collegiate Education, Government of Andhra Pradesh, Shri N. Rangachary, Chairman, Insurance-Regulatory Authority, Ministry of Finance and Shri Ramesh Gelli, Chairman and Managing Director, Global Trust Bank Limited.

National Seminar on Cauvery

A national seminar on the "Cauvery — A Living Museum" was organised by the Departments of English and Commerce, St. Joseph's College, Tiruchirapalli in association with the Indira Gandhi Rashtriya Manav Sangrahalaya, Bhopal recently. The seminar focused on the environomics of River Cauvery, its archaeological highlights, numismatic aspects, geological and cultural perspectives. The seminar also threw light on the Cauvery dispute, apart from analysing the river as a subject of aesthetic and social praxis.

More Industry-Campus Links

Exposing university students and the faculty to the latest developments in industries will strengthen industry-academic links, Mr. N. Kumar, past president of the Confederation of Indian Industry (CII) has reportedly said this while inaugurating a workshop on 'Technology Development and Utilization' organised by the Centre for University Industry Collaboration (CUIC) of Anna University and the Instrument Society of India. Nothing that more work needs to be done in terms of industry-institute collaboration, Mr. Kumar said adding the students and the faculty should be in the know of what is happening in industry. Similarly, the faculty

needs to modify their teaching methods to suit the changing scenario and to aid industry.

Mr. Kumar, who is the Vice-chancellor of the Sanmar group, emphasised the inclusion of more venture capitalists in workshops that focus on technology development.

The Small and Medium Enterprises (SMEs) that contribute immensely to the growth of the nation and were a major avenue for employment generation should utilise the technology available at varsity laboratories.

Prof. A. Kalanidhi, Anna University Vice-chancellor said several laboratories in the university were of international standards with enough expertise to draw national and international funding.

The Anna University was keen on rendering support to efforts aimed at bringing industry closer to educational institutions.

There was a proposal to conduct sectorwise workshops regularly focusing on technology.

Major General A. Balasubrahmanian, officer on special duty in the Department of Electronics and former chief director of information systems, Defence Research and Development Organisation (DRDO) emphasised the need to change "the archaic and time consuming" methods of transfer of technology.

IGNOU's Collaborative Projects

Indira Gandhi National Open University (IGNOU) is reported to have undertaken nearly 17 national and international collaborative projects. At the international level, Excel international (UK) Asian Development Bank through

Price Water house, Common Health of Ledming I (COL) Canada, Common Wealth Sectt., London & United Nations Development Programme have joined hands with IGNOU.

At the Non-governmental level, Care India, Catholic Bishops Conference of India (NGO), Common-wealth Youth Programme Asian Centre, Chandigarh, have made the collaboration with IGNOU.

The projects are diverse like empowering women through distance mode of Education and Training especially for Elected Members of Panchayats, District Primary Education Programme, Virtual Campus Initiative, Human Rights Programme, Community Awareness in Disaster preparedness, Training of Trainers Programme, Strengthening Local Government, Education and Training of Rural Youth, providing vocational training to tannery workers, programmes for in service Auxiliary : Nurse Midwife, HIV and family education, Youth in development programme, Literacy programmes, & mapping experiences in education of adolescent.

Sir Syed Day Celebrations

More than 30,000 students, old boys, teachers and employees of Aligarh Muslim University were reported to have participated in a convivial dinner organised to mark the 182nd birth anniversary of Sir Syed Ahmed Khan, the founder of AMU.

The university was illuminated and hundreds of eager visitors frequented the Bab-e-Sir Syed on the campus. There was a mad rush for making it to the newly constructed gate as many generations of AMU students mingled with each other. After

prayers for Sir Syed at his grave and offering of flowers, there was a unique spectacles of ceremonial buggie ride from the Sir Syed House to the athletics stadium.

A number of distinguished guests from all over the country and former students of the university were present to soak in the joy of the historic occasion.

To commemorate the occasion, the university launched a website on its founder. The website contains life and works of Sir Syed and is intended to renew acquaintance of people with the legendary social and educational reformer. A directory containing the names of 200 media alumni of AMU, compiled by Dr. Rahat Abrar was also released.

On the historic day an exhibition of books, portraits and letters of Sir Syed was inaugurated. On display were thousands of books written on Sir Syed as also numerous letters written by Sir Syed to many of his contemporary educationists and political masters. The exhibition, which also had portraits of the AMU founder remained open till 21 October.

A number of cultural programmes livened the atmosphere.

The son of the Chancellor Burhanuddin, Qaid Bhai Jauhar Izzuddin, was the chief guest. In his message, the Chancellor said, "Sir Syed wielded the pen for the emancipation of Muslims. His efforts in the field of education went a long way in propagating education" among the community.

The Sir Syed Day celebrations were rounded off with a community dinner in which 30,000 people participated.

Student Exchanges

For the past three years, La Trobe University, Melbourne, and Lady Shri Ram College of Delhi University are reported to have engaged in an exchange program which has enabled students from each institution to study for extended periods at the other.

Two La Trobe students, Lisa Smith (1997-98) and Clare Tucker (1998-99), have undertaken one-year programs at Lady Shri Ram College. A third students, Rose Kitching, commenced study in Delhi in early August.

Two Lady Shri Ram students, Tanvi Gautam (1997-98) and Mughda Rai (1998-99), have each spent twelve months at La Trobe University. The third student to come to Melbourne under this scheme is Shirin who arrived at the start of second semester.

For more information, contact Elizabeth Hill, International Office, La Trobe University. Ph : (03) 9479 1249.

Post-Doctoral Positions

Inter-University Centre for Astronomy and Astrophysics (IUCAA) is reported to be offering Post-Doctoral fellowships in Astronomy & Astrophysics. The duration of the fellowship is flexible within a range of one to five years, with the possibility of conversion to a tenured position. IUCAA offers challenging opportunities to young research workers in theory, observation and instrumentation in Astronomy and Astrophysics. IUCAA plans to have a 2m optical telescope operational during 2000 and there will be special opportunities of optical astronomy and related instrumentation. Interested candidates may apply to The Coordinator, Core Programmes, IUCAA, Post Bag 4, Ganeshkhind, Pune-411

007, India, with curriculum vitae and list of publications and arrange for three confidential references to be sent independently. All the relevant material should reach IUCAA by November 25, 1999. Candidate will be informed of the result by January 15, 2000. The fellowship will normally commence during 2000. Accommodation on the campus will be offered to all post-doctoral fellows. For further details please contact the Coordinator Core Programmes, IUCAA.

Fraud Monitoring

Indira Gandhi National Open University (IGNOU) is reported to have appointed a surveillance panel to monitor fraud in 'Distance Education'.

IGNOU Vice-chancellor A.V. Khan said, officials from public information, security and legal departments of the university will comprise this committee, to curtail misleading or illegal advertisements by private institutions in distance education, which mislead students.

He said the function of the panel is to monitor deceptive advertisements appearing in national or regional dailies and in periodicals, by keeping a watch on educational activities of the non-governmental and private institutions.

Anna Varsity Offers Expertise

The Anna University will offer its expertise to educational institutions in the southern part of the country, the Vice-chancellor Anna University, Dr. A. Kalanik is reported to have said this while addressing corporate managers and students at a seminar, 'Marketing strategies in the next decade'. He said the university would remain an ivory tower if assistance were not extended to educational institutions which required the

The country's economy had been thrown open to MNCs and today's managers would have to devise strategies to gain entry into a market already flooded with products.

Advising students to follow ethics and "play within the rules rather than with them", he said information technology had made education today a learning process for all.

Calling for greater attention to management studies, he said it was yet to expand on new frontiers unlike the engineering discipline at the undergraduate level which had nearly 100 branches, the management studies were yet to accord greater concentration to allied specialities.

Mr. T.T. Vasu, industrialist, delivering the keynote address said consumers today were juggling with the brands forcing companies to rework their market strategies.

The only way to ensure brand loyalty was to constantly upgrade quality and provide value for money. Cracking the price-value equation continued to be the best bet to 'capture' consumers.

In the present marketing environment, lost customer value analysis by firms could provide clues to work out preventive measures. Similarly, "customer-audit" would help adjust and fine-tune marketing operations. Total customer-care programme was a demanding exercise and resources spent on customer services should be considered investment for sustainable customer loyalty.

Despite the fascination for foreign brands being deep-rooted in the Indian consumer psyche, foreign players had so far not been able to capitalise on it and find instant success on Indian turf. The mass market demands striking the right

price-quality equilibrium and an emerging trends is the street smart Indian entrepreneur, who is aggressive and determined to protect his territory. The presentation of a product, its quality, price and positioning were key factors today.

The Chairman of the Vellore Engineering College, Mr. G. Viswanathan, said globalisation had lead to firms providing products suitable to requirements of specific geographical markets.

Dr. B.V.A. Rao, Principal, Prof. S.R. Pullabhotla, Dean, Placement and Training and Prof. S. Sundaramurthy, Head, Institute of Management Studies, were among those who spoke at the seminar organised by the Vellore Engineering College.

Software Park at Bharathiar Varsity

A software technology park is likely to come up at Bharathiar University under a collaborative project with the Electronic Corporation of Tamil Nadu (ELCOT), Prof. B. Ilango, Vice-chancellor of the University is reported to have said this while delivering the presidential address at the 15th Convocation of Bharathiar Varsity. Prof. Ilango said that the technology park on the campus would benefit students, teachers and entrepreneurs, in addition to generating far-reaching collaborative ventures related to information technology.

A diploma course in Computer Hardware Maintenance and Administration will be offered from

the academic year 1999-2000, under the distance education mode, by the Department of Computer Science and Engineering, in collaboration with a private company in Coimbatore. All preliminary works had been completed for starting a new M.Sc. (Environmental Biology) course designed exclusively for defence personnel.

MSc. in NGO Management

A postgraduate course in Management of Non-Government Organisations for the Third World is offered by the London School of Economics' Centre for Voluntary Organisation. Senior staff of NGOs in the Third World can take advantage of it.

The programme aims to enable participants to analyse the problems and issues arising in the organisation and management of NGOs, and gain a deeper understanding of their organisation and the context in which they operate.

All MSc. students will take two core courses and an optional course, and submit a 10,000 word dissertation or project. The core courses tackle NGO Management, Policy and Administration and Voluntary Sector Policy and Administration. Courses, if taken full-time, last one year but may be extended to two years for part-time study.

For further information about the programme, contact the Centre for Voluntary Organisation at the London School of Economics. Tel : (44-171)955-7375/7205; Fax : (44-171)955-6093; E-mail:<H.Drummond@lse.ac.uk>.

News from Agricultural Universities

Symposium on Animal Health

The 3-day National Symposium on Animal Health : Retrospect and Prospect was held at CCS Haryana Agricultural

University recently with participation of more than one hundred animal Health Experts from all over India.

During these three days, the participants comprising microbiologists, Immunologists, specialists in infectious diseases and Directors Animal Husbandry from different states took stock of the successes achieved so far and work out strategies for 21st century.

Dr. C.M. Singh, President, Indian Veterinary Council inaugurated the Symposium with the proclamation that India was ready to face challenges of globalisation in livestock sector. Dr. Singh said that milk sector provides subsistence to 40 million families in the country whereas sheep and goat sector has been the lifeline of landless labourers and marginal farmers. He said that notwithstanding the fact that due to eradication of rinderpest and efficient control of a number of animal diseases, country has been able to increase livestock and poultry production substantially, much remains to be done to induct livestock farmers into scientific rearing practices. Dr. Singh appealed the august audience to disseminate newer technologies of animal breeding to the grass-root level of animal breeders. He regretted that due to inadequate surveillance, 39 livestock pathogens entered the country through vaccines and semen. Warning the participants to remain alert towards the possible hinderances, Dr. Singh emphasised that the conservation of germplasm and development of repository of pathogen were the other challenges which the country would be facing in 21st century.

Mr. Vinay Kumar, Vice-chancellor, CCSHAU in his presidential address said that galloping deficit each year on foreign ex-

change front, ever increasing population on one hand and decreasing manpower on the other as also the illiteracy were the major challenges that the nation is poised to face in the coming times.

The Vice-chancellor urged the participants to elevate human miseries by harnessing natural resources more effectively through use of science and technology. Citing the example of Japan, which the Vice-chancellor said, has the highest density of population in the world and least natural resources, has achieved the phenomenal growth only because of equipping its natural resources and human resource with the potential of science and technology. It was, therefore, amply evident that what shape our country take in 21st century would depend much on the extent to which science and technology would be put to use for harnessing our natural and human resources.

On this occasion, the Vice-chancellor awarded a number of participants with Dr. C.M. Singh

Memorial Award, Dr. P.G. Pandey Memorial Award, Late Dr. M.N. Kulkarni and Dr. P.K. Uppal Young Scientists Travel Grant Award. Participants from Panjab Agricultural University (PAU) Ludhiana bagged maximum number of awards.

Earlier, Dr. R.D. Sharma, Dean of the host College of Veterinary Science, CCSHAU welcomed the participants and the guests. Dr. D.P. Monga, Organising Secretary and Prof. & Head, Department of Veterinary Microbiology, CCSHAU conducted the proceedings. Dr. R.R. Bakshi, President, Indian Association of Veterinary Microbiologists (IAVM) and Dr. A.A. Kumar, Secretary, IAVM while addressing the participants highlighted the activities undertaken by the Association during the preceding year. Dr. Bakshi said that introduction of annual and external system of examination in the colleges of Veterinary sciences as also the implementation of entrance examination at the undergraduate level would in longway help in achieving excellence in the academic level.

News from UGC

Countrywide Classroom Programme

Between 8th November to 14th November, 1999 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programmes are telecast on the Door-darshan's National Network from 9.30 to 10.00 a.m. every day except on Saturdays &

Sundays. These programmes are also telecast on Doordarshan National Network from 6.00 to 6.30 a.m. on all days of the week. On DD2 International Programme will be shown at 11.00 to 12.00 hours on Saturdays on

8.11.99

"घरेलू जनरेटर"

"The Story of the Yard and

the Metre"

"Indian Miniature Paintings"

"Effective Interpersonal Communication"

9.11.99

"समय के साक्षी एक इमारत गाँधी हाल"

"The Medium is the Message"

"The Mughal Miniatures-1"

"Vasundhara : Forest, Trees and People"

10.11.99

"Feeling Good-9"

"Rice to Every Mouth-2"

"The Mughal Miniatures-2"

"Kadamb"

11.11.99

"Early Chalukyan Temples Aihole"

"Women in Profession : Women Entrepreneurs-2"

"Question Time-127"

"Art Education — Understanding Art-1"

12.11.99

"Romanticism in English Poetry"

"Siege of English"

"Art Education — Art Appreciation-2"

"An Ancient Indian Sport : Kho-Kho-2"

13.11.99

"The Dancing Hands"

"The Touch of Genius"

"The Nuclear Saga : Birth of the Bomb"

"Tough of Genius"

14.11.99

"Understanding Cinema-10 : Editing"

will pay a stipend above the rate normally paid to teaching assistant and research assistants. Chandrasekhar Fellows will be required to serve as teaching assistants for a total of two quarters during the two-year term, but otherwise will have no teaching or research duties associated with the Fellowship. The Chandrasekhar Fellows will be selected from the applicants to the Ph.D. programmes of the Departments of Physics and Astronomy and Astrophysics; no separate application procedure is required. It is expected that approximately one Fellowship will be awarded each year, with the first Fellow to be chosen from the applicants entering for the class of the academic year 2000-2001. Preferential consideration will be given to applicants from India.

News from Abroad

Midnight to Millennium

The *Midnight to Millennium : Australia-India Interconnections* conference was held at the University of Canberra recently.

Opened by the Minister for Foreign Affairs, Alexander Downer, it brought together academics, business people and specialists in international relations, economics, communication and the environment.

A number of prominent Indian participants attended, including Mr. Rajeev Dhavan, a well-known barrister, and Professor Charan Wadhwa, from the Centre for Policy Research, New Delhi.

Mr. Dhavan and Australian historian, Professor Geoffrey Bolton, gave the pre-dinner keynote addresses at old Parliament House.

Participants discussed ways to

develop the Australia-India relationship. A Canberra University-South Asia group has been set up to pursue further initiatives.

For further details contact Dr. Auriol Weigold. Ph: (02)62012545; E-mail: agw@comserver.canberra.edu.au.

Chandrasekhar Memorial Fellowship

The University of Chicago, USA is reported to have established Subrahmanyan Chandrasekhar Memorial Fellowship for outstanding incoming graduate students in the Ph.D programmes of the Department of Physics and the Department of Astronomy and Astrophysics. The term of the fellowship will be of two years. During this period, the Fellowship will cover tuition expenses in full, and

Human Rights Training Program

Columbia University in New York is offering a Human Rights Training Program from January to May 2000. The programme is designed for advocates seeking to study international human rights, develop their advocacy skills, exchange experiences and strategies with human rights advocates from other parts of the world, and become better acquainted with international human rights organisations.

The programme includes auditing human rights courses chosen from the Columbia Law and Human Rights & Humanitarian Affairs curricula; participation in group seminars on human rights issues; participation in practical skills training workshops; visits to human rights institutions in New York and Washington, D.C., and independent research and internship with a New York-based human rights agency.

BOOK REVIEW

Pre-Service Education

C.S. Subba Rao*

Khosla, D.N. Competency Based and Commitment Oriented Teacher Education for Quality School Education, Pre-service Education, Document, National Council for Teacher Education, NCTE, New Delhi. Pp.52.

No doubt that "the National Council for Teacher Education has been assigned with various types of specific as well as comprehensive tasks covering almost all aspects of teacher education. Quality enhancement in teacher education is one of the major assignments before the council", say the first two sentences in the book. Quality enhancement is mostly limited to the maintenance of standards of teacher education institutions of all types and at all level within the purview of NCTE under the regulatory sections (5-12), of the NCTE Act.

The task of developing policies, programmes, curricula, manuals, tools, aids and such other materials fall under the jurisdiction of the Department of Teacher Education, NCERT and if NCTE is also doing such work it will be simply duplication of effort under the same ministry of Human Resource Development.

The publication on pre-service education under review highlights the competency, commitment and performance areas according to R.H. Dave formula and they are true for all stages of teacher education in a general way. This is the fourth in the series after the curriculum framework, initiation and in-service education documents so far

published by NCTE. While reviewing the 2nd and 3rd documents in *University News* of March 22, 1999, I made a mention that for each level of teacher education "the working out of ten competencies in the teacher behaviour language in relation to the five commitment areas (50) and again in relation to the five performance areas (250)." Thus future workshops may have to work out for each level of teacher education under 250 categories the teacher behaviour both for in-service and pre-service teacher education, under the leadership of the Department of Teacher Education, NCERT, instead of the NCTE diverting resources, time and undesirable mushroom growth of sub-standard teacher education institutions under political influence with commercial motives. The document contains a preface and an introduction by Prof. J.S. Rajput and Prof. R.H. Dave explaining the scheme of the publication which contains four chapters : 1. Context, 2. Competency Areas, 3. Commitment Areas and 4. Performance Areas.

Under Chapter 1 it is mentioned that "Professional education of teachers is considered as essential and critical as the training and education in any profession like medicine, law, engineering and others before being inducted in the learning centre as a teacher, it is necessary that the individual internalises a definite quantum of basic understanding of certain principles essential for initiating the process of

teaching and learning."

This idea of pre-service education is disputable as many schools have been employing untrained persons as teachers bypassing rules and some time back there were many instances of state governments permitting untrained people to teach in schools due to dearth of hands consequent upon fast quantitative expansion of education after independence. This raises the question "whether teaching is a profession?"

Untrained persons could be appointed as teachers unlike in the medical or engineering professions etc, where without the essential professional knowledge no work could be undertaken. Even in colleges and universities it is considered that teachers need not possess a pre-service professional qualification and the college teachers imitate their teachers and now a days attend courses organised by the staff colleges. Correspondence courses and open university programmes are in vogue for in-service teachers of schools and mostly it is school based on the job training. In view of this situation serious doubt arises whether teaching is a profession and insistence on pre-service education of teachers is essential, as it appears that such rigorous professional/technical knowledge and practical training were not found essential. Perhaps an initiation/induction programme for a month followed by periodic vacation courses may serve the purpose of gaining the now available professional knowledge in education in course of time. So the statement "essentiality of pre-service teacher education has since been well established on scientific principles and logical considerations", is only desirable making the process of in-service education a continuous process.

"They may have to draw inspiration from the indigenous

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thoughts that have developed in the country over the years — an indigenous approach and a set of experientially evolved strategies shall have to be discovered to replace the colonial practice and psyche of archaic approach in education." There is nothing much to discover new as Mahatma Gandhi evolved the system of Basic Education 50 years back and this was tried out successfully for about 30 years. Of course there will be room for improvement in any system or practice. But the sad mistake of Kothari Commission was to indirectly discard the indigenous system and revert to the old irrelevant Mecauly approach without being conscious of its mistake. The biggest lacuna in the present system is lack of inculcation of values and commitment due to absence of a basic national philosophy of education of personality development and community service.

Chapter 2 dealing with competency areas categorised them under contextual, conceptual, content, transactional, other educational activities, teaching learning materials, evaluation, and management, working with parents and working with community. Most of the explanation given under each category is traditional and commonplace usually taught in the present teacher education programmes. It is realised that continued self-directed learning is emphasised as organised in-service components in sufficient measures and duration are not avoidable. Such an effort also enhances the commitment part of the individual teacher in co-operation with his peers. Identification of individual learning difficulties and development of solution is vital for quality improvement of education. Factors responsible for non-enrolment, dropouts, national integration, information technology, value erosion, unemployment should find a prominent place in the school curriculum. National policies and international understanding, health, sanitation, family welfare etc have to be meaningfully related to the textual material of dif-

ferent school subjects. Identification of strategies and tools for group learning, peer learning, individual learning to achieve mastery learning is emphasised under transactional competencies. So far it is an unsolved problem that teachers even after having undergone teacher training do not practice the methods and strategies and fall back to the established routine procedures, affecting the credibility of the training itself and leaving many a gap between expectations from teachers and the ground realities. The focus is on only cognitive development of the children leaving non-cognitive areas alone resulting in value erosion. This can be remedied by paying more attention to the various celebrations and work with the community. Education should no longer confine itself to the textbook and students should be made to see the relationship between textual materials and work in the community. Creativity through project work should be encouraged using many alternative and supplementary materials and methods.

Dealing with evaluation competencies it is highlighted that the examination system based on marks and divisions has done immense damage brandishing students as failures or third raters. Every student can develop to his potential maximum and nothing more and the teacher should evaluate his own methods to know whether he has been able to achieve it. Evaluation should be used for diagnostic and prognostic purposes. This is possible by making evaluation (and not examination), continuous, comprehensive and objective to plan remedial teaching for personality development covering cognitive, emotional and psychomotor skills. To remedy overcrowding in classrooms and multigrade teaching monitorial system can be adopted, besides other strategies in vogue. Bettering institutional climate by organising the school as a community with student self-government will enhance the

quality of self-learning and peer learning making library as its centre. Community resources should be fully utilised and parent co-operation sought through village education committees, gram panchayat, youth clubs, mahil mandals etc. School should be allowed to be used as a community centre. All these ideas were present in the scheme of basic education of Mahatma Gandhi focusing all round development of the Head Hand and Heart (3H) is correlating education to life for value based approach. Students are always watching the behaviour of teachers. A self-analysis of one's own behaviour by every teacher could develop commitment and a sense of belonging accountability and responsibility towards the local community.

Departing from the traditional view teachers are now considered to be employees working for salary and professional organisation hardly focus attention on academic excellence of teachers. It is necessary to identify and analyse reasons and factors, which have been responsible for bringing down the prestige of the teaching profession and ways and means, are to be found to reinstate this noble profession to its pristine status. Just as the farmer keeps the best seed to sow for the next crop, the best students with aptitude for teaching have to be selected to take up this profession. We cannot forget the best teachers who made indelible mark on the hearts of children for a lifetime. We may be able to develop the cognitive and psychomotor skills in the teacher through the initial pre-service training, but it is difficult to invent a method to make this a missionary to undertake this profession for man making. How to do, it is the million dollar question.

The publication under review is a useful one to give the theoretical background of the curriculum developers in teacher education at all levels in conjunction with the teacher education curriculum framework earlier published by the NCTE. □

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities (July Aug-1999)

AGRICULTURE AND VETERINARY SCIENCES

Agriculture

1. Bansal, Parminder Singh. Studies on the effects of ultrasound therapy and diathermy after bone plating in metacarpal fracture of bovines. Department of Agricultural Sciences, Punjab Agricultural University, Ludhiana.

2. Christopher, M J. Random amplified polymorphic DNA analysis and nucleic acid probes for characterisation of leptospirae. (Dr P Ramadoss), Department of Animal Biotechnology, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

3. Felix, S. Studies on the formulation of compounded feeds for nursery and growout systems of macrobrachium rosenbergii (de man). (Dr M J Prince Jeyaseelan), Department of Agriculture, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

4. Kalaimathi R. Molecular characterization of newcastle disease virus. (Dr P Ramadoss), Department of Animal Bio-technology, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

5. Kannan T P. High resolution banding of chromosomes in cattle. (Dr Thangaraju), Department of Animal Genetics and Breeding, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

6. Narayanaswamy, H D. Pathology of fusarium T-2 mycotoxicosis in broiler chickens. (Dr A Sundararaj), Department of Pathology, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

7. Parthiban, M. Molecular characterization of infectious bursal disease virus (IBDV). (Dr V Thiagarajan), Department of Animal Bio-technology, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

8. Ruby Renchith. Histopathological survey of shrimp diseases. (Dr B Murali Manohar), Department of Pathology, Madras Veterinary College, Chennai.

9. Sharma, Pawan Kumar. Identification and management of viruses infecting tomato in Himachal Pradesh. (Dr S C Chowla), Department of Plant Pathology, Dr Yashwant Singh Parmar University of Horticulture and Forestry, Nauni.

10. Shoba K. Vaccine and vaccination against Ranikhet (newcastle) disease under field conditions. (Dr N Dorairajan), Department of Microbiology, Veterinary College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

11. Sukumar, D. Evaluation and comparison of shrimp farm management practices: Prospects for sustainability. (Dr V Sundararaj), Department of Agriculture, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

Pomology

1. Das Biswajit. Nutrient Indexing and preliminary

DRIS norms for apple orchards. (Dr H S Verma), Department of Pomology, Dr Yashwant Singh Parmar University of Horticulture and Forestry, Nauni.

BIOLOGICAL SCIENCES

Biology

1. Swain, Shantilata. Litter production decomposition and soil metabolism in a young regenerating teak forest of Sambalpur. (Dr Niranjana Behera), School of Life Sciences, Sambalpur University, Burla.

Botany

1. Jain, Suresh Chand. Cytogenetical study of diploid, triploid and tetraploid forms of turnip (*Brassica rapa* L.). (Dr C Prasad), Department of Botany, Vinoba Bhave University, Hazaribag.

2. Kanungo, Promod Kumar. Bacterial nitrogen fixation associated with rice ecosystem. Department of Botany, Utkal University, Bhubaneswar.

3. Sinha, Vinay Kumar. Effect of chemical mutagen on some legumes. (Dr H Roy), Department of Botany, Vinoba Bhave University, Hazaribag.

4. Sthapak, Jyoti. Effect of particulate pollutants on the phenology, canopy cover chlorophyll contents, protein contents on some terrestrial plants of Mandideep area of Raipur District, Bhopal. (Dr Pratibha Singh), Department of Botany, Barkatullah Vishwavidyalaya, Bhopal.

5. Sudha. In vitro study of endosymbionts associated with tissue culture raised medicinal plants. (Prof P S Srivastava), Department of Botany, Jamia Hamdard, New Delhi.

Zoology

1. Brown, Surendra Albert. Studies on sex pheromone and its role in mating behaviour of some insects (lepidoptera). (Dr M A Khan), Department of Zoology, Barkatullah Vishwavidyalaya, Bhopal.

2. Mishra, Rajesh Kumar. Zoology effect of starvations, polluted water on the biochemical parameters of a teleost fish heteropneustes fossilis with relative weight of the body. (Dr S N Sahay), Department of Zoology, Vinoba Bhave University, Hazaribag.

3. Pandarkar, Arunkumar Kashinath. Some aspects of the biology of a freshwater fish *macronus bleekeri* from a dam near Ahmednagar, Maharashtra State. (Dr U H Mane), Department of Zoology, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

4. Rai, Anuradha. Activated natural killer cell mediated cytotoxicity of fibrosarcoma cells in mouse. (Dr A K Chakraborty), Department of Zoology, University of North Bengal, Darjeeling.

5. Rajmohana K. Systematic investigation on the bio-

diversity of diapid fauna (Hymenoptera:Proctotrupoidea) of Kerala at the Alpha Level. (Dr T C Narendran), Department of Zoology, University of Calicut, Calicut.

6. S P Venkata Ramana. Life cycle and larvae performance of some tropical butterflies (Prof C Subba Reddy), Department of Zoology, Andhra University, Waltair.

7. Sahu Daya Sagar. Pigment content and photochemical activities of cuscutea reflexa. (Dr N K Choudhary), Department of Life Sciences, Sambalpur University, Burla.

EARTH SYSTEM SCIENCES

Environmental Sciences

1. Puri, Surinder Kumar. Investigation and characterisation of noise situation in a coal open cast mining complex. (Dr A K Pal and Shri R P S Rathore), Department of Environmental Sciences, Indian School of Mines, Dhanbad.

Geology

1. D J Devadas, Occurrence and geochemistry of fluoride in ground waters of a typical drought prone area of Andhra Pradesh, India. (Dr N Subba Rao), Department of Geology, Andhra University, Waltair.

2. Putra, S.V.S. Pavana Sedimentological and geochemical studies on late quaternary sediments of middle and lower Bengal fan. (Dr P Bhanu Murty), Department of Geology, Andhra University, Waltair.

3. Raju, D E V S S N. Integration of remote sensing and geotectonic data of manganese, graphite, bauxite and phosphate ore deposits, associated rocks from parts of the Eastern Ghat Mobile Belt, India. (Dr K K V S Raju), Department of Geology, Andhra University, Waltair.

4. Rao, K V Janardhana. Ore petrology of chromitite from Boula-Nausahi area, Keonjhar Dist, Orissa State India with specific reference to nickeliferous lateritisation. Department of Geology, Andhra University, Waltair.

5. Rao, P Jagadeeswara. An integrated study on hydrogeology, remote sensing and morphometry with special emphasis on ground water resource evaluation of Champavathi river Basin A P India. (Dr M Jaganadha Rao), Department of Geology, Andhra University, Waltair.

Hydrology

1. M L Waiker. Capacity expansion of a water resources system. Department of Hydrology, University of Roorkee, Roorkee.

ENGINEERING SCIENCES

Automobile Engineering

1. Devaradjane, G. Multizone modelling and prediction of pollutants of an automotive diesel engine. Department of Automobile Engineering, Anna University, Chennai.

Civil Engineering

1. Krishna Mohan B. Pump sump design practices and model studies. (Prof D L Narasimha Rao), Department of Civil Engineering, Andhra University, Waltair.

2. M Ramalingam. Modelling of watershed for sustainable development using remote sensing and GIS. Department of Civil Engineering, Anna University, Chennai.

ment of Civil Engineering, Anna University, Chennai.

3. Madhavi Ganesan. Simulation - optimisation approach for seawater intrusion control in the Minjur-mouthambedu aquifer system, Chennai. (Prof S Thayumanavanan), Department of Civil Engineering, Anna University, Chennai.

4. Ravikumar G Land use based integrated drought assessment. (Dr M Karmegam), Department of Civil Engineering, Anna University, Chennai.

5. Thandavamoorthy, Thiru T S. Assessment and rehabilitation of damaged steel offshore structures. (Dr A R Santhakumar), Department of Civil Engineering, Anna University, Chennai.

Earthquake Engineering

1. Sharma, Ravi Kumar. Dynamic properties of reinforced sand. Department of Earthquake Engineering, University of Roorkee, Roorkee.

Electronics Engineering

1. Vaidehi, V. Scheduling algorithms for multiprocessor systems and their applications to the Kalman tracking algorithms. (Dr C N Krishnan), Department of Electronics, Anna University, Chennai.

Energy Studies

1. Aggarwal, Shruti. Computer based thermal modelling of advance solar distillation systems : An experimental validation. (Prof G N Tiwari), Department of Energy Studies, Indian Institute of Technology Delhi, New Delhi.

2. Reddy, Kalvala Srinivas. Thermal optimisation of high performance solar water heating and steam generating systems. (Prof N D Kaushika), Department of Energy Studies, Indian Institute of Technology Delhi, New Delhi.

3. Usmani, Jamshed Ahmad. Thermal Analysis, performance evaluation of biogas system and reduction of co emissions. (Dr A Chandra and Prof G N Tiwari), Department of Energy Studies, Indian Institute of Technology Delhi, New Delhi.

Mechanical Engineering

4. Bhagwat, Rajat. Study on decision and information delays in CIM systems. (Dr Subhash Wadhwa), Department of Mechanical Engineering, Indian Institute of Technology Delhi, New Delhi.

5. L Krishnanand. Some approaches to automatic recognition of machining features from 2D CAD models. Department of Mechanical Engineering, Kakatiya University, Warangal.

6. Varma, Bh. Srinivasa. Development and performance evaluation of alumina based ceramic cutting tools for machining certain ferrous materials. Department of Mechanical Engineering, Kakatiya University, Warangal.

Mineral Engineering

1. Walmiki, Ashok Rayappa. Heap leaching of low grade gold bearing ore of hutti gold mines company LTD. (Dr N R Mandre and Shri J S G Naik), Department of Mineral Engineering, Indian School of Mines, Dhanbad.

Mining Engineering

1. Saxena, Vinod Kumar. Investigation into spontaneous combustion characteristics of coal seams with special reference to Jharia coalfield. (Prof D C Panigrahi and Prof N C Saxena), Department of Mining Engineering, Indian School of Mines, Dhanbad.

Photonics

1. Issac Riju C. Evolution and dynamics of plasma generated from solid targets by strong laser fields. (Dr C P Girija Vallabham), Department of Photonics, Cochin University of Science and Technology, Cochin.

Technology

1. Gopalakrishnan, U G. In vivo mutagenesis, cloning and expression studies on CYT gene coding for hemolytic factor of bacillus thuringiensis subsp. israelensis 4Q6. (Prof Kunthala Jayaraman), Department of Technology, Anna University, Chennai.

2. Sharma, Pramod Kumar. Computer modeling and experimental testing of Greenhouse for off-season crop production for rural application. (Dr V P S Soravan and Prof G N Tiwari), Centre for Rural Development and Technology, Indian Institute of Technology Delhi, New Delhi.

3. Subrahmanian, V. Investigations on technological properties of typical rubber and rubber-short fibre formulations. Department of Technology, Anna University, Chennai.

Textile Technology

1. Chakrabarti, Anup Kumar. Influence of fibre parameters and twist on friction yarn quality and spinning stability. (Dr R Chattopadhyay), Department of Textile Technology, Indian Institute of Technology Delhi, New Delhi.

MATHEMATICAL SCIENCES

Mathematics

1. Gupta, Sandipan. Fuzzy mathematical programming-development of preference models for optimization. (Dr M Chakraborty), Department of Mathematics, Indian School of Mines, Dhanbad.

2. Indra Deo Narain Prasad. A study of some problems in Mathematical Biosciences. (Dr B N Mishra), Department of Mathematics, Vinoba Bhave University, Hazaribag.

3. Mishra, Bandana. A study of development in ancient Indian mathematics. (Dr Arun Kumar), Department of Mathematics, Vinoba Bhave University, Hazaribag.

4. Paul, Jiban Ch. Modelling and forecasting the energy consumption in Bangladesh. (Prof S P Pal), Department of Mathematics, University of North Bengal, Darjeeling.

Statistics

1. Jacob T M. Sequential estimation in some Markovian Models. (Dr M Balakrishna), Department of Statistics, Cochin University of Science and Technology, Kochi.

MEDICAL SCIENCES

Haematology

1. Bhardwaj, Urvashi. Study of status of Alpha gene

locus in Punjabies and its relationship with beta thalassemia. Department of Haematology, Postgraduate Institute of Medical Education and Research, Chandigarh.

Medicine

1. Ramamoorthi K P. Pancreatic calculus diabetes in North Malabar. (Dr T Ramakrishna), Department of Medicine, Calicut University, Calicut.

Neuropathology

1. Kudesia, Sandip. Diffuse axonal injury - An autopsy study in fatal cases of head injury. (Dr Sarala Das), Department of Neuropathology, National Institute of Mental Health and Neuro Sciences, Bangalore.

PHYSICAL SCIENCES

Biochemistry

1. Saleem Javed. Cloning and expression of pituitary hormone genes. (Prof S K Jain), Department of Biochemistry, Jamia Hamdard, New Delhi.

2. Srivastava, Nidhi. Characterization of gonadotropin hormone genes. (Prof S K Jain), Department of Biochemistry, Jamia Hamdard, New Delhi.

CHEMISTRY

1. Atanu Adhvaryu. Studies on the effect of base oil composition on additive response. Department of Chemistry, University of Roorkee, Roorkee.

2. Prakash, N B Thiru. Studies in effluent treatment. (Dr V Ramamurthy), Department of Chemistry, Anna University, Chennai.

3. Putcha Sarada. New and novel diterpenoids of some soft corals of the Indian Ocean. (Prof A S R Anjaneyulu), Department of Chemistry, Andhra University, Waltair.

4. Shivakumar R. Electro chemical studies on zinc electrode for the developments of zinc based secondary battery systems. Department of Chemistry, Alagappa University, Karaikudi.

PHYSICS

1. Ilangoan, R Growth and characterisation of some perovskite and tungsten-bronze single crystals. Department of Physics, Anna University, Chennai.

2. Mishra, Swarnalata. Quantification of heavy metals in Brahmani river ecosystem at Rourkela and its modelling. (Dr P C Mishra and Dr T N Tiwari), Department of Physics, Sambalpur University, Burla.

3. Ray, Aparna. Some non-linear problems of thin plates and shells. (Dr B Banerjee), Department of Physics, University of North Bengal, Darjeeling.

4. Shengule, Dadarao Ramnath. Studies on substituted spinal structured magnetic oxide systems. (Dr G K Bichile), Department of Physics, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

5. Sinha, Rajendra Nath. Xanes studies of some systems containing transition metals. (Prof A R Chetal and Dr P Mahato), Department of Physics, Indian School of Mines, Dhanbad.

INDIAN COUNCIL OF MEDICAL RESEARCH

Applications are invited upto 25th Nov., 1999 for the following posts :-

(A) NATIONAL INSTITUTE OF EPIDEMIOLOGY, CHENNAI : Deputy Director (Epidemiology) (One post). (in the scale of pay of Rs. 14300-400-18300) **Qualifications & Experience : Essential :** M.B.B.S. with 12 years or M.D. in Community Medicine/Preventive and Social Medicine with 10 years research/teaching experience in conducting qualitative and quantitative epidemiological studies in communicable/non-communicable diseases. **Desirable :** Training and experience in Epidemiology preferable of communicable diseases. **Requirements :** To plan, conduct, analyse, interpret and report, epidemiological studies and control strategies in communicable/non-communicable disease.

(B) MALARIA RESEARCH CENTRE, DELHI : Deputy Director (Molecular Biology) (One post). (in the scale of pay of Rs. 14300-400-18300). The Malaria Research Centre (MRC) carries out the multidisciplinary research on various aspects of malaria. It is engaged in service in endemic areas, field research to demonstrate the feasibility of bioenvironmental methods on malaria control, studies on vector biology, biological control of vectors and transmission dynamics of malaria and on both basic and applied research including application of molecular biological methods. The MRC also conducts drug trials, toxicity studies, evaluation of diagnostic tests and newer insecticides and repellents. The Centre also collaborates with other organizations/institutes in carrying out studies in Malaria. **Qualifications & Experience : Essential :** MBBS/1st class M.Sc. in any subject under Life Sciences. Genetics/Biochemistry with 12 years research/teaching experience specialization in Molecular Biology. Nucleic acids, recombinant DNA technology as evidenced from original research publications or M.D./Ph.D. with 10 years research/teaching experience in the related field. **Desirable :** Experience in Insect and parasite Molecular Biology. **Job Requirements :** The incumbent would be required to (i) guide and carry out research on molecular biological aspects of malaria vectors and parasite to develop molecular tools for diagnostics, population and ecological and vector control genetics, evolutionary aspects (ii) conduct training courses/workshops (iii) any other job assigned by the Director.

(C) REGIONAL MEDICAL RESEARCH CENTRE, PORT BLAIR : (I) Deputy Director (Medical) (One post) (Scale of pay of Rs. 14300-400-18300). **Qualification & Experience : Essential :** (a) MBBS with 12 years experience of Teaching/Research in fields like Microbiology/ Medicine/ Community Medicine/ Communicable Diseases or 10 years experience for candidates possessing MD in relevant field. (b) Original research work as evidenced by publications in standard journals. **Desirable :** Research experience in the field of Leptospirosis/ Hepatitis/ Diarrhoeal diseases and Tribal health. **Job Requirements :** To plan research programmes, draft proposals and undertake research on different aspects of communicable diseases especially Leptospirosis. Diarrhoeal diseases and Hepatitis. Besides these the incumbent will have to assist the Director in planning, executing and monitoring other activities of the Centre including administrative matters as and when required.

(II) Asstt. Director (One post). (in the scale of pay of Rs. 12000-375-16500) **Qualifications & Experience : Essential :** (a) MBBS or M.Sc. (1st class) in Microbiology/ Biochemistry/ Biotechnology/ Life Science with 12 years research/teaching experience or M.D./Ph.D. with 10 years research/teaching experience in related fields. (b) Original work as evidenced by publications in standard journals. **Desirable :** Research experience in the field of Leptospirosis/ Hepatitis. **Job Requirements :** To develop programmes for training and research, plan, undertake research on different aspect of communicable diseases and tribal health.

(D) INSTITUTE OF PATHOLOGY, NEW DELHI : Asstt. Director (One post). (in the scale of pay of Rs. 12000-375-16500) **Qualification & Experience : Essential :** (a) MBBS or M.Sc. (1st class) with 12 years research/teaching experience or M.D./Ph.D. with 10 years research/teaching experience in Pathology and related fields. (b) Original work as evidence by scientific publications in standard journals. **Desirable :** The candidate should be committed to a research career. He/She should have a good academic background and experience in the use of special techniques such as Immunopathology, electron microscopy Histopathology. Tissue culture and/or Mol. Biology as applied to human pathology. **Job Requirements :** The candidate will be required to actively participate in the ongoing research projects in the Institute. He/She will be expected to develop independent research projects and take initiative in obtaining research grants from national and international funding agencies.

(E) NATIONAL INSTITUTE OF CHOLERA & ENTERIC DISEASES, CALCUTTA : Sr. Research Officer (Biochem) (One post). (in the scale of pay of Rs. 10000-325-15200) **Qualification & Experience : Essential :** MBBS/M.Sc. (1st class) in Biochemistry/ Life Sciences with 6 years research/teaching experience or M.D./Ph.D. with 2 years research/teaching experience. **Desirable :** Candidates with experience and original publication. **Job Requirements :** The Scientist will have to plan, initiate and conduct research on the biochemistry/molecular biochemistry. The incumbent should be able to integrate knowledge on biochemistry/ molecular biochemistry into research projects. Any other research / teaching/ training/ administrative activity assigned by the supervisors.

(F) NATIONAL INSTITUTE OF VIROLOGY, PUNE : Senior Research Officer (Tissue Culture & Cell Biology) (One post). (Scale of pay of Rs. 10000-325-15200) **Qualifications & Experience : Essential :** MBBS/M.Sc. (1st class) in Microbiology/ Biotechnology/ Biochemistry/ Life Sciences with 6 years research/teaching experience in the above subjects (preferably in tissue culture/cell biology/ virology) evidence by good quality publications

(2 years research/teaching experience in case of candidates possessing M.D./Ph.D. **Job Requirements :** The candidate should be able to formulate and carry out research programme of the Institute in the field. The candidate should carry out field investigations in any part of India and for any length of the time.

(G) ICMR HQRS. OFFICE, NEW DELHI : Senior Research Officer (One post). (Scale of pay of Rs. 10000-325-15200) **Qualifications & Experience : Essential :** MBBS/M.Sc. (1st class) in Biomedical Sciences with 6 years experience in the field of Biomedical Research (2 years experience in case of candidates possessing M.D./Ph.D.). **Desirable :** Experience in carrying out Research in Biomedical Sciences. **Job Requirements :** The incumbent will be required to assist Director General in monitoring and co-ordinating research programmes in Health in the Council.

AGE : Below 50 years for the post of Deputy Director and below 45 years for the post of Asstt. Director and Sr. Research Officers. SC/ST/OBC and departmental candidates are allowed relaxation in accordance with Central Govt. Rules, in force. Benefits of pension is admissible. Private practice is not allowed. But NPA as per rules of the Council is admissible only to those with medical degrees. Application forms and other information are obtainable from the Office of the Director General, Indian Council of Medical Research, Post Box No. 4911, Ansari Nagar, New Delhi-110029. Forms duly completed should be sent to the Director General, ICMR, Ansari Nagar, New Delhi-110029, with a crossed IPO for Rs. 8/- payable to Director General, ICMR, New Delhi (SC/ST & departmental candidates are exempted from this payment). Incomplete/late applications or without postal orders will not be entertained. Any canvassing by or on behalf of the candidates or to bring political or other outside influence with regard to selection/recruitment shall be a disqualification.

NOTE : Requirement of 1st class M.Sc. will be relaxable in appropriate cases of candidates who are possessing Ph.D. degree/equivalent degree in related subject. In the event of non availability of suitable candidates for advertised posts, the position can be filled up at lower level. Since it is not possible to call all the eligible candidates for the interview/personal discussion, the applicants will be short listed for the purpose. The decision of Director General will be final in this regard. The above posts are with all India transfer liability under the Council.

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Qualifications (for all positions) :

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Experience :

Associate Professor : At least 8 years' teaching/research/industrial experience of which 3 years should be at the level of Assistant Professor.

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Interested candidates may apply in the prescribed forms obtainable from Assistant Registrar (Recruitment) on request within November 20, 1999 by sending an unstamped envelope (26 cm x 11 cm) indicating the Department. The fields of specialisation and other relevant details will be supplied with the application form. The completed application form along with a crossed Demand Draft of Rs.100/- as application fee (non-refundable) drawn in favour of Indian Institute of Technology, Kharagpur and payable at the State Bank of India, Kharagpur be sent to the Assistant Registrar (Recruitment), latest by December 15, 1999. SC/ST candidates are exempted from paying any application fee.

Applicants from abroad may submit their applications in plain paper stating the date of birth, contact address, present position, the department to which the appointment is sought, position applied for, educational qualifications starting from Madhyamik/equivalent giving the percent of marks/grade, teaching experience, professional/industrial experience stating the responsibility associated with the job, a list of publications and reprints up to 5 of most significant publications and names and addresses of four distinguished persons who can act as referees. Application fee of US \$ 25.00 in favour of Indian Institute of Technology, Kharagpur should be sent along with the application to the Assistant Registrar (Recruitment) latest by December 31, 1999. For details one can visit us at : <http://www.iitkgp.ernet.in>

Qualifications and experiences, prescribed above, are only the minimum and mere possession of the same does not entitle to a candidate to be called for interview. The Scrutiny Committee at its discretion may call applicants for interview for a position lower than that applied for. The required minimum experience may be relaxed for meritorious candidates. Exceptionally meritorious candidates may be considered even if their specialisations are not advertised.

Registrar

INDIAN MARTIAL ART

A PACKAGE OF SEVEN VIDEO PROGRAMMES ILLUSTRATING MARTIAL ART TRADITIONS OF INDIA, UNFOLDS A COLORFUL WORLD WHERE SCIENTIFIC PRECISION & ARTISTIC AESTHETICS CONVERGE SEAMLESSLY.

Synopses

HUYEN LALLONG (24 MIN)

Huyen Lallong a unique martial art of Manipur, is almost on the verge of extinction. This film, beginning with the initiation ceremony and graduating to the dexterous use of weapons such as swords, shields, spears and sticks, illustrates the rigorous process of training. Techniques and skill of unarmed combat are complementary to this process.

KALARIPAYATT (19 MIN)

This film documents another vibrant Martial Art tradition of India - Kalaripayatt, from Kerala. Originating as far back as the 10th century AD, Kalaripayatt is an exquisite art combining intricate movements woven around a rhythmic pattern. Various exercises and stances prescribed as training procedure, are essentially drawn from animal movements.

AFFINITIES AND DIFFERENCES (19 MIN)

This film is an incisive comparison between two martial art traditions from two different cultural contexts - Thangta from Manipur and Kalaripayatt from Kerala. Interesting variations found in techniques, stances, movements, etc. have to do with the regional context and psychological settings of the people in these parts of India. The harnessing of mental energy by showing ultimate concern for Mother Goddess is the basic spiritual corner stone of both traditions. An insightful comparison of two colourful Martial art traditions. (A series by AVRC, Imphal).

MARTIAL ART OF ORISSA - I (19 MIN)

This video deals with a unique, medieval martial art tradition of Orissa, called Palk dance which was practised by infantry soldiers. This documentary underlines the characteristic features and various exercises, known as *khela* which include the use of sword, sticks and a typical hand-shield.

MARTIAL ART OF ORISSA - II (19 MIN)

The second episode goes into some aspects of the training of this martial art. It tries to capture the stunning variety of ground and aerial exercises associated with this art tradition. This film is a tribute, as it were, to this glorious martial tradition on the verge of extinction. (A series by EMRC, Calcutta).

INDIAN STICK FIGHTING-I (20 MIN)

Stick, a special type of bamboo or cane, is perhaps the oldest companion of human beings, either as a support or as a weapon. The historic association of the two gave birth to the first martial art tradition - Stick Fighting. This two part video series throws light on various styles and techniques of a glorious tradition that is being forgotten today.

INDIAN STICK FIGHTING - II (27 MIN)

Can you imagine a stick as a shield covering the whole body? This film captures some of the incredible performers and exotic traditions displaying a spell binding range of the tradition of stick fighting. (A series by EMRC - Hyderabad).

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SITUATION VACANT

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Reservations are as per U.P. Govt. rules and regulations. Symbols indicate U.R.-Unreserved, SC-Scheduled Caste, ST-Scheduled Tribe, OBC-Other Back Ward Castes.

(A) Professor (Rs.16400-450-20900-500-22400) No. of Vacancy - 4 (Permanent) Physics - 2 (UR & SC/ST * *); Zoology-1 (UR); History-1 (UR)

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(B) Librarian (Rs. 16400-450-20900-500-22400) One Post (UR)

(C) Reader (Rs. 12000-420-18300) No. of Vacancies-11

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**Ag. Botany-1 (OBC); Statistics-1 (SC); Economics-1 (UR); Political Science-

1 (UR) ** Chemistry (Organic)-1 (UR); Russian-1 (UR)

Note :- **The Posts are temporary but likely to continue.

(D) Lecturer (8000-275-13500) No. of Vacancies-11

Economics-1 (SC); Botany-1 (OBC); Computer Sc.-1 (UR) Sociology-2 (OBC, UR); History-1 (SC); Psychology-1 (SC); Education-1 (OBC); ** Chemistry

(Inorganic)-1 (UR); ** Hindi-1 (UR); ** Urdu-1 (O.B.C.).

Note :- ** The Posts are temporary but likely to continue.

ESSENTIAL QUALIFICATIONS : (A) Professor : 1. Eminent scholar with published work of high quality and active engagement in research and ten years experience of teaching or research and experience of guiding research at Doctorate level.

OR

Outstanding scholar with established reputation for significant contribution to knowledge.

(B) Librarian : (i) Master's Degree in Library Science/Information Science/Documentation with Min. 55% marks or equivalent degree and consistently good academic record. (ii) One Year's Specialization in Information technology/Archival Conservation and Preservation of manuscript or Master's Degree in the specialized area of Institution. (iii) At least a minimum of 10 years experience as Dy. Librarian in a University library or 15 years experience as Librarian in a Degree College. (iv) Evidence of innovation in Library Service and organisation and published work.

DESIRABLE QUALIFICATION : M.Phil/Ph.D. in Library Science/Information Science/Documentation/Conservation of Archives and preservation of Manuscripts. Library is in advanced stage of computerisation. Those well versed in the process of computerisation will be preferred.

(C) Reader : (i) Good academic record with a Doctorate degree or equivalent published work, active engagement in research or innovation in teaching methods or production of teaching materials and (ii) Five years exp. of teaching or research including atleast 3 years as lecturer or in an equivalent position.

Provided that the requirement in contained in subclause-(ii) may be relaxed in the case of a candidate who, in the opinion of the selection committee, has outstanding research work to his credit.

(D) Lecturer : 1. Master's degree or an equivalent degree of a foreign Univ in the relevant subject with at least 55% marks or its equivalent grade and consistently good academic record. 2. Qualified NET or equivalent test or State comprehensive test conducted as per scheme of the UGC. 3. NET qualification is relaxable if M.Phil. completed or submitted the Ph.D. thesis before Dec. 31, 1993 or NET qualification is relaxed for such subjects by UGC. 4. Only for B.Ed.-A candidate for lecturership in the faculty of education having obtained either an average of 55% marks in B.Ed. degree and second class in any other Bachelor's degree or 50% marks in each of the two examinations separately is said to have consistently good academic record.

NOTE : 1. Separate application forms be submitted for each post. 2 The OBC candidates are required to send their non-creamy layer certificate as per Govt. Notification, otherwise their application will be considered in general category. 3. The candidates belonging to SC/ST and OBC are free to apply as general candidates also. 4. Mere fulfilling the essential and desirable qualifications will not entitle an applicant to be called for interview. 5. The number of posts may increase or decrease.

6. Last date for receipt of completed application by the University is 15th December, 1999.

(V. K. SINHA) REGISTRAR



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- Candidates shortlisted on the basis of academic performance and CAT scores will be called for group discussion and interview for final selection at **New Delhi, Bangalore and Calcutta** during middle of **March 2000**. However the institute reserves the right to cancel any interview centre.
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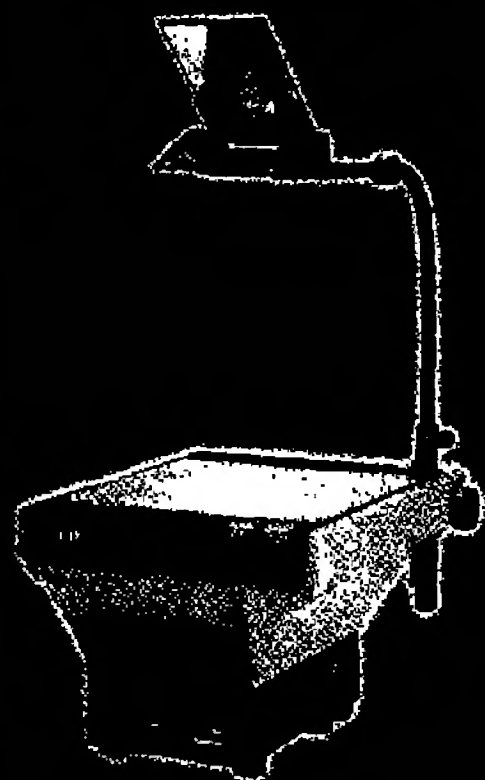
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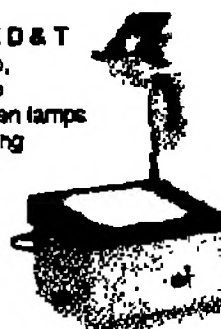
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